Canon

Network Video Recording Software
RM Series

RM-64 / RM-25
RM-9 / RM-Lite

Administrator Manual

Make sure you read this manual before using the software.
For support information, including software updates (patch installer), user manuals, and operating environments, see the Canon Web site.

ENGLISH

Thank you for purchasing RM-64/RM-25/RM-9 v3.2 Network Video Recording Software (hereafter referred to as “RM-64/25/9” or “this software”).
This manual also explains how to use RM-Lite v3.2 Network Video Recording Software (hereafter referred to as “RM-Lite”). For the difference between RM-64/25/9 and RM-Lite, see “About RM-Lite” (p. 34).
Please read this manual before using the software. After reading this manual, keep it in a safe place for future reference.
Some cameras are not sold in some countries or regions. In addition, please read the license agreement before using the software. The license agreement can be found in the LICENSE folder on the setup CD-ROM.

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About Third Party Software

This product contains third party software modules. Each module's license conditions are also available in the OpenSourceSoftware folder in the LICENSE folder on the accompanying set-up CD-ROM.

About the Manuals

This product has the following manuals:

- Administrator Manual (this guide)
  This manual is intended for the system administrator and provides information on how to operate this software product.
- Viewer Operation Guide
  This simplified manual is intended for general users and explains how to operate the Viewer.

Please also read the manuals provided with each camera, as required.

This manual assumes that you display and read it on your computer's screen.

About Sample Screens Unique to This Software

In this manual, some screens that are unique to this software are used as examples to illustrate operations. Please note that they may differ from the actual screens.
The VB-M40, VB-H41, and VB-S30D are mainly used as the example cameras in this manual. In addition, screens using Windows 7 Basic theme are displayed as samples to describe operations.

■ Icons in This Manual

The following icons indicate descriptions you should pay close attention to.

Icon	Meaning
Important	Cautions and restrictions during operation. Make sure to read these carefully.
Note	Supplementary descriptions and reference information.
Hint	Information useful for operation.

■ Icons Indicating Camera Models

The following icons indicate information unique to that camera model.

Icon	Camera Model
S30	VB-S30D
S31	VB-S31D
S80x	VB-S800D and VB-S805D
S90x	VB-S900F and VB-S905F
H43	VB-H43
H41	VB-H41
H630	VB-H630VE and VB-H630D
H610	VB-H610VE and VB-H610D
H730	VB-H730F
H710	VB-H710F
M42	VB-M42
M40	VB-M40

Icon	Camera Model
M620	VB-M620VE and VB-M620D
M600	VB-M600VE and VB-M600D
M720	VB-M720F
M700	VB-M700F
C500	VB-C500VD and VB-C500D
C60	VB-C60
C300	VB-C300
C50F	VB-C50Fi and VB-C50FSi
C50i	VB-C50i and VB-C50iR

■ Icons Indicating Products

The following icons indicate information that is unique to the full product and the Lite version.

Icon	Meaning
RM-64/25/9	Features unique to the RM-64/25/9. They cannot be used with RM-Lite.
Lite	Information unique to RM-Lite.

Features

The RM-64/25/9 is a software product family used to monitor multiple locations using network cameras and to record and play back video from the cameras. It is possible to set up a monitoring system with a maximum of 64 cameras (when using RM-64).

Flexible screen layout
You can arrange multiple video windows in the Viewer, so you can compare video from different locations at the same time. The Viewer lets you create multiple layouts and organize them in tabs on the viewing area, so you can easily switch between different camera video. You can also operate up to two Viewer windows at the same time. With an environment that supports multiple displays, you can create a dual-display monitoring setup by locating a Viewer on each of the displays.

Multiple recording modes
In addition to being able to record video for a specific period, you also have recording modes, such as sensor recording, motion detection recording, intelligent function recording and volume detection recording, which start recording when a particular type of camera event occurs.

Support for JPEG/MPEG-4 and H.264*
The JPEG, MPEG-4 and H.264 video formats are supported for live view and recording. Using MPEG-4 or H.264 formats decreases the load on the network bandwidth, while maintaining high quality video and saving hard disk space when recording.

* Only available for cameras that support the feature.

Camera tags
You can assign tags to a camera that give you information about the camera, such as its location and camera type. This is particularly useful when searching for cameras in a large-scale system.

Dynamic layout
With this feature, you can automatically display videos on a layout from cameras that meet specific criteria, such as the camera status.

Direct camera operation*
You can change the camera angle and use the zoom while watching the live view.

* Only available for cameras that support the feature.

User access management with user groups
You can create user groups to more easily manage user access. By assigning permissions for Viewer functionality to a group, you automatically assign the same permissions to each member of the group.

Shade control
Shade control automatically compensates for the dark regions in the video and can be used for both live and recorded video.

Two-way audio*
Send and receive live audio and simultaneously record audio with the video. You can also use this feature to communicate with a location that has a camera.

* Only available for cameras that support the feature.

Record Now
Use this feature to immediately start recording when you do not have a recording schedule set up.

Saving a segment of a recording
You can extract part of a recording and save it as a video file that can be played on a computer.

Viewer PTZ
You can instantly crop a region of live video or recorded video during playback using an intuitive operation to zoom in on that region.
You can also crop and zoom several videos simultaneously for side-by-side comparison.

Lite Some features have limited functionality. For details, see “About RM-Lite” (p. 34).

Setup Flow

The flow from preparation before introducing the system, to operation management and maintenance is shown below.

Step 1 **Prepare for introducing the system**	Consider the video storage period and recording conditions, determine the hard disk capacity required for recording and prepare the equipment. See “System Design” in Chapter 1: Introduction.
Step 2 **Set up your cameras**	Set up your cameras for live video display or recording. See your camera manuals.
Step 3 **Install**	Install this software product on your computer. See Chapter 2: Setup.
Step 4 **Set up the Storage Servers**	Set up the Storage Server Group and Storage Servers. See Chapter 3: Storage Server Settings.
Step 5 **Add cameras**	Add cameras to the Storage Server Groups. See Chapter 3: Storage Server Settings.
Step 6 **Configure the Viewer**	Configure the Viewer to match your environment and use. See Chapter 4: Viewer Settings.
Step 7 **Set a recording schedule**	Set the recording conditions for using the cameras, including regular recording and motion detection recording. See Chapter 5: Setting a Recording Schedule.
Step 8 **Day-to-day operation**	Control cameras while viewing live video, check events, and play back recorded video. You can set up your own layouts for the video windows. See Chapter 6: Day-to-Day Operations.
Step 9 **Operation management and maintenance**	We recommend that you set up a management and maintenance process, such as taking regular backups of recording files, to reduce the impact of network failures on system operation. See Chapter 7: Operation and Management and Chapter 8: Backup.

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Chapter 1

Introduction

- ❏ System requirements (operating environment, supported cameras, license conditions)
- ❏ System configuration and design guidelines
- ❏ RM-Lite specification comparison

Operating Environment

For High-reliability/H.264 Video Format Systems

	Storage Server	Viewer
CPU	Intel Xeon 3060, Intel Core 2 Duo 2.4 GHz or higher, or an Intel CPU of equivalent class that meets the following requirements: Clock: 2.4 GHz or higher L2 cache: 4 MB or greater Number of cores: 2 or more	Intel Core i5 750 2.67 GHz or higher – Intel Core i7 3.5 GHz or higher recommended when displaying 1920 x 1080 video
Memory	2 GB or greater	
Hard disk	Interface: SAS / SATA Cache: 16 MB or greater Spindle speed: 7200 rpm or faster 100 MB is required for installation (an additional 500 MB is required if .NET Framework 3.5 SP1 or .NET Framework 4.5 is not installed) Additional space for recording files and other files (the actual space required depends on the number of cameras and the recording settings) We recommend that you use separate hard disk drives for the OS and the recording data. The hard disk drive for the recording data should have a capacity of 1 GB or greater.	100 MB is required for installation (an additional 500 MB is required if .NET Framework 3.5 SP1 or .NET Framework 4.5 is not installed) Additional space for saving extracted video files, as required.
Network controller	1000 BASE-T or similar, 1 Gbps transfer speed	
Display	—	1280 × 1024 resolution or higher 16-bit colors or greater – Required to display all user interfaces of the Viewer
Graphics	—	NVIDIA GeForce GT 220 or higher, or a graphics card of equivalent class that meets the following requirements: Video memory size: 1 GB or greater Memory interface width: 128-bit or larger Memory clock: 790 MHz or higher – NVIDIA GeForce GTX 660 or higher recommended when displaying 1920 x 1080 video
Others	—	Audio support is required for audio playback (p. 107).
Operating system	Windows Vista Ultimate/Business/Enterprise SP2 32/64-bit Lite Windows Vista Ultimate/Business/Enterprise/Home Premium SP2 32/64-bit Windows 7 Ultimate/Professional/Enterprise SP1 32/64-bit Lite Windows 7 Ultimate/Professional/Enterprise/Home Premium SP1 32/64-bit Windows 8/Windows 8 Pro/Windows 8 Enterprise 32/64-bit Windows 8.1/Windows 8.1 Pro/Windows 8.1 Enterprise 32/64-bit Windows Server 2008 Standard SP2 32/64-bit Windows Server 2008 R2 Standard SP1 64-bit Windows Server 2012 Standard 64-bit Windows Server 2012 R2 Standard 64-bit – When a highly reliable system (such as 24 hours of uninterrupted use) is required, server operating systems are recommended.	
Operating system language	English, German, Spanish, French, Italian, and Japanese – Environment languages switched using language-packs are not supported.	

- The system requirements described above are the minimum configuration, assuming the following operating environment:

Storage Server	Maximum recording/playback data rate	80 Mbps *1
	Overall recording frame rate	1280 fps or slower *2
	Maximum number of cameras with motion detection *3	10
	Maximum events processed *4	20,000 events per day
Viewer	Estimated display frame rate *5	When using recommended Intel i5 + GT 220 For 1920 x 1080 display size: 20 fps (15 fps for H.264)*6 For 1280 x 720 display size: 40 fps For 1280 x 960 display size: 40 fps For 960 x 540 display size: 45 fps For 640 x 360 display size: 80 fps For 640 x 480 display size: 80 fps For 480 x 270 display size: 160 fps For 320 x 180 display size: 320 fps For 320 x 240 display size: 320 fps When using Intel i7 + GTX 660 For 1920 x 1080 display size: 30 fps (15 fps for H.264)*6 For 1280 x 720 display size: 40 fps For 1280 x 960 display size: 40 fps For 960 x 540 display size: 45 fps For 640 x 360 display size: 80 fps For 640 x 480 display size: 80 fps For 480 x 270 display size: 160 fps For 320 x 180 display size: 320 fps For 320 x 240 display size: 320 fps
	Total number of simultaneously displayable MPEG-4 and H.264 videos	6 or less *7

*1 If the volume per second of recording and playback data handled by one Storage Server is 80 Mbps or greater, you should review your recording requirements to ensure system stability. The following shows an estimate of the recording and playback data volume per second for various video formats.

	320 x 240	640 x 480	1920 x 1080
JPEG	810 fps	280 fps	50 fps
MPEG-4	80 Mbps		
H.264			

For standard resolution ([Video Quality] set to 3), the JPEG video frame rates will result in an estimated data rate of 80 Mbps.
Audio data requires a Storage Server of 64 Kbps, regardless of the type of camera.
See “System Information” (p. 113) for details on the recording/playback data volume per second during operation.

*2 The data size of recorded audio is calculated using a frame rate of 10 fps per camera.

*3 Number of cameras selected in [Motion Detection Using] > [Storage Server] for motion detection recording.

*4 Total number of all types of events.

*5 Assumes a standard resolution ([Image Quality] setting is [3]) and that the receive size and display size are the same. If the receive size and display size are different, performance may decrease due to an increase in processing load.

*6 When multiple video sizes are combined, they will be equivalent to the following: 1920 x 1080 will be equivalent to 14 320 x 240 size videos, 1280 x 720 will be equivalent to 8 320 x 240 size videos, 1280 x 960 will be equivalent to 8 320 x 240 size videos, 960 x 540 will be equivalent to 7 320 x 240 size videos, 640 x 360 will be equivalent to 5 320 x 240 size videos, 640 x 480 will be equivalent to 5 320 x 240 size videos, 480 x 270 will be equivalent to 2 320 x 240 size videos, 320 x 180 will be equivalent to 1 320 x 240 size videos.

For example, the following combinations will result in a total equivalent of 320 x 240 at 320 fps.

1920 x 1080, 5 fps	→	320 x 240, 5 fps x 14 = 70 fps equivalent
1280 x 960, 5 fps	→	320 x 240, 5 fps x 8 = 40 fps equivalent
960 x 540, 8 fps	→	320 x 240, 8 fps x 7 = 56 fps equivalent
640 x 480, 8 fps	→	320 x 240, 8 fps x 5 = 40 fps equivalent
480 x 270, 25 fps	→	320 x 240, 25 fps x 2 = 50 fps equivalent
320 x 240, 64 fps		
		Total: 320 x 240, 320 fps equivalent (70 + 40 + 56 + 40 + 50 + 64)

*7 The number of videos you can display at once depends on the amount of memory available. If there is not enough memory, you will not be able to display videos.

- In a system environment with a large number of cameras and connected viewers and where the number of events that may occur is also likely to be high, the Storage Server must come with the specifications that meet the needs of that environment for stable operation.
- If you need to operate a high-reliability system (such as for 24-hour operation) in a system environment, we recommend that you use a server operating system on the computer that is used for the Storage Server.
- When high-reliability operation is required (such as for 24-hour operation, and high frequency disk access) we strongly recommend that you use a high-reliability SAS hard disk. Using a low-reliability SATA hard disk may result in a disk error in a one to two year period. Therefore, you may need to check the disk for errors on a regular basis, using features such as scan disk. In such a case, recording performance may suffer during checking, due to the increased load on the disk.
- With systems intended for users requiring high-reliability/H.264, when operating both the Storage Server and the Viewer on one computer, the operating environment must satisfy the requirements for both the Storage Server and the Viewer. However, to help ensure stable operation, we recommend that you use separate computers for the Storage Server and for the Viewer.

For Small-scale Systems (Both Storage Server and Viewer Installed)

	Storage Server
CPU	Intel Pentium G6950 2.80 GHz or higher, or an Intel CPU of equivalent class that meets the following requirements: Clock: 2.4 GHz or greater L2 cache: 512 KB or greater L3 cache: 3 MB or higher (only required if the L2 cache is less than 3 MB) Number of cores: 2 or more
Memory	2 GB or greater
Hard disk	Interface: SAS / SATA Cache: 16 MB or greater Spindle speed: 7200 rpm or faster 200 MB is required for installation (an additional 500 MB is required if .NET Framework 3.5 SP1 or .NET Framework 4.5 is not installed) Additional space for recording files and other files (the actual space required depends on the number of cameras and the recording settings) Additional space for saving extracted video files, as required. The hard disk drive for the recording data should have a capacity of 1 GB or greater.
Network controller	100 BASE-TX or similar, 100 Mbps transfer speed
Display	1280 × 1024 resolution or higher 16-bit colors or greater
Others	Audio support is required for audio playback (p. 107).

	Storage Server
Operating system	Windows Vista Ultimate/Business/Enterprise SP2 32/64-bit Lite Windows Vista Ultimate/Business/Enterprise/Home Premium SP2 32/64-bit Windows 7 Ultimate/Professional/Enterprise SP1 32/64-bit Lite Windows 7 Ultimate/Professional/Enterprise/Home Premium SP1 32/64-bit Windows 8/Windows 8 Pro/Windows 8 Enterprise 32/64-bit Windows 8.1/Windows 8.1 Pro/Windows 8.1 Enterprise 32/64-bit Windows Server 2008 Standard SP2 32/64-bit Windows Server 2008 R2 Standard SP1 64-bit Windows Server 2012 Standard 64-bit Windows Server 2012 R2 Standard 64-bit
Operating system language	English, German, Spanish, French, Italian, and Japanese – Environment languages switched using language-packs are not supported.

- The system requirements described above are the minimum configuration, assuming the following operating environment:

Storage Server	Maximum recording/playback data rate	16 Mbps *1
	Recording frame rate	256 fps or slower *2
	Maximum number of cameras with motion detection	0
	Maximum events processed *3	10,000 events per day
Viewer	Estimated display frame rate *4	1920 x 1080: 1 fps
		1280 x 960: 2 fps
		960 x 540: 5 fps
		640 x 480: 10 fps
		480 x 270: 15 fps
		320 x 240: 30 fps
	Total number of simultaneously displayable MPEG-4 and H.264 videos	6 or less*5

*1 Do not use H.264 in small-scale systems, as this can have a negative effect on system operation.

*2 The data size of recorded audio is calculated using a frame rate of 10 fps per camera.

*3 Total number of all types of events.

*4 Assumes a standard resolution ([Image Quality] setting is [3]) and that the receive size and display size are the same. If the receive size and display size are different, performance may decrease due to an increase in processing load.

*5 The number of videos you can display at once depends on the amount of memory available. If there is not enough memory, you will not be able to display videos.

- The following are guidelines for implementing a system for a small-scale user.

System components	Guideline
Number of cameras	Approx. 9 cameras (assuming RM-9 is used for operation)
Recording frame rate	5 fps x 9 cameras with 320 x 240 standard resolution (approx. 8 Mbps in terms of data rate)
Live view frame rate	3 fps x 9 cameras (= 27 fps) with 320 x 240 standard resolution
Playback	5 fps for each camera with 320 x 240 standard resolution Maximum number of playable cameras: Up to 6 (30 fps total) with a playback-dedicated layout Up to 1 with the live view layout (see above) (3 fps x 8 live view cameras + 5 fps x 1 playback camera)
Others	H.264 is not used

- Lite The Viewer computer specifications on p. 14 are required even for small scale systems (up to four cameras) using RM-Lite, if you want to display H.264 video.

Important Notes Concerning System Requirements

- This software does not support external storage, such as USB hard disks and NAS.
- We recommend that you operate this software in its own dedicated LAN environment.
- The software may not be able to record video if you use an environment where the IP addresses of the cameras are occasionally changed. Use fixed IP addresses to ensure proper operation.
- Be sure to operate the cameras, Storage Servers and Viewers over networks using the same network protocol (e.g. all over IPv4 networks, or all over IPv6 networks).
- For details on the operating system, see “Additional Considerations” in “Operating Environment” (p. 18).
- C50F C50i Audio cannot be transmitted from a Viewer if you use the Viewer on a computer running Windows 7, Windows 8, Windows 8.1, Windows Server 2008 R2, Windows Server 2012 or Windows Server 2012 R2.
- Before applying a service pack or updating the operating system, please refer to the Canon Web site).
- Running Windows Update may cause the system operation to become unstable, the operating system to restart, or recording to stop.
- Using anti-virus software or a firewall may affect the performance of the Storage Server and Viewer.
- Running software other than this product or compatible camera management software may cause system operation to become unstable.
- When there is a high load on the CPU or hard disk, video may not be recorded or displayed at the specified frame rate, recording may be interrupted, or the Viewer operation speed may decrease. In addition, recording may be interrupted when the available hard disk space is low.
- Operation may slow down if the amount of stored data (number of recording files) becomes large.
- Depending on the performance of the computer and the network environment, changes in the recording environment (such as the time of day and the weather) may result in it not being possible to display recorded or live video according to the specified settings.
- Using IPsec may degrade the performance for recording and displaying video.
- You can use the camera audio feature (except for the VB-C50Fi, which does not support the function). Review the following items before using the feature.
  - The Viewer supports transmission and reception of audio data.
  - Audio data cannot be recorded separately, and is always recorded together with the video.
  - Synchronization is enabled only when playing back recorded video (JPEG) and recorded audio. However, the audio and video may not be synchronized, depending on the operating environment (p. 82).
  - The audio stream may be interrupted, depending on the performance of your computer and network environment.
  - Audio may be interrupted when using anti-virus software.
- Be sure to test the system under your operating environment before starting regular operation.

Note

- The system environment of the Storage Server will depend on your operating conditions (number of cameras, recording frame rate settings, etc.), as well as the pre-event recording settings. For details, contact your local supplier.
- Microsoft .NET Framework 3.5 SP1 or .NET Framework 4.5 is required for this software to operate. .NET Framework 3.5 SP1 is automatically installed when installing RM-64/25/9. For RM-Lite, install it from the included CD-ROM before installing RM-Lite. Enable .NET Framework 4.5 if it is currently disabled.
- The following runtime module is installed automatically with RM-64/25/9 and RM-Lite. Do not uninstall this module.
  - Microsoft Visual C++ 2008 Redistributable
- Microsoft .NET Framework 4.0 is not supported.

Additional Considerations

- Do not specify the Windows folder or the Program Files folder on the system drive as the destination for snapshots or recording files. You cannot save images or videos to those folders.
- You cannot use the shadow backup feature with this software. For example, once you delete the configuration file for this software, the file cannot be restored with the shadow backup feature.

Supported Cameras

Camera	Firmware Version
VB-S30D	Ver. 1.1.0 or later
VB-S31D	Ver. 1.1.0 or later
VB-S800D	Ver. 1.1.0 or later
VB-S900F	Ver. 1.1.0 or later
VB-S805D	Ver. 1.0.0 or later
VB-S905F	Ver. 1.0.0 or later
VB-H43	Ver. 1.0.0 or later
VB-H630VE	Ver. 1.0.0 or later
VB-H630D	Ver. 1.0.0 or later
VB-H730F	Ver. 1.0.0 or later
VB-H41	Ver. 1.1.1 or later
VB-H610VE	Ver. 1.2.1 or later
VB-H610D	Ver. 1.2.1 or later
VB-H710F	Ver. 1.2.1 or later
VB-M42	Ver. 1.0.0 or later
VB-M620VE	Ver. 1.0.0 or later
VB-M620D	Ver. 1.0.0 or later
VB-M720F	Ver. 1.0.0 or later
VB-M40	Ver. 1.1.1 or later
VB-M600VE	Ver. 1.1.1 or later
VB-M600D	Ver. 1.1.1 or later
VB-M700F	Ver. 1.1.1 or later
VB-C500VD/VB-C500D	Ver. 1.1.2 or later
VB-C60	Ver. 1.1.3 or later
VB-C300	Ver. 1.1 Rev. 5 or later
VB-C50i/VB-C50iR	Ver. 1.2 Rev. 77 or later
VB-C50FSi/VB-C50Fi	Ver. 1.0 Rev. 77 or later

Note

See “Using the AXIS Q7404/Q7401” (p. 137) for details on limitations when using the AXIS Q7404/Q7401.

Camera Video Sizes

Camera	Category*1	Video Size			
VB-S30D/VB-S31D/ VB-S800D/VB-S900F/ VB-S805D/VB-S905F/VB-H43/VB-H630VE/ VB-H630D/VB-H730F/VB-M42/VB-M620VE/ VB-M620D/VB-M720F	1080p*2	–	480×270	960×540	1920×1080
	720p	–	320×180	640×360	1280×720
	4:3	–	320×240	640×480	1280×960
VB-H41/VB-H610VE/VB-H610D/VB-H710F		320×240	480×270	960×540	1920×1080
VB-M40/VB-M600VE/VB-M600D/VB-M700F		160×120	320×240	640×480	1280×960
VB-C500VD/VB-C500D/VB-C60/VB-C300/VB-C50i/VB-C50iR/ VB-C50FSi		160×120	320×240	640×480	–

*1 Categories are switched on the camera's setting page.

*2 VB-S805D/VB-S905F/VB-M42/VB-M620VE/VB-M620D/VB-M720F not supported.

Product Type and Number of Licenses

The number of cameras that can be added to a Storage Server Group depends on the specific software product.
The following table describes the number of licenses required for servers and Viewers, as well as the number of Storage Servers that can be configured as a Storage Server Group, for each product.

Software product	Number of server licenses	Number of Storage Server Groups	Maximum number of cameras that can be added to a Storage Server Group	Number of Viewer licenses
RM-64	1	1	64	1
RM-25	1	1	25	1
RM-9	1	1	9	1
RM-Lite	1	1	4	1

About Licenses

Each software product includes one license for the Storage Server and one license for the Viewer. The number of computers that a product with one license can be installed on is described below.

Storage Servers
One server license allows you to install one Storage Server on a computer.

Viewers
One Viewer license allows you to install one Viewer on a computer.
Up to 6 Viewers can connect to a Storage Server at one time.
You are able to purchase individual Viewer licenses, therefore you must purchase the same number of licenses as you have Viewer installations.

Maximum System Configuration

The following table describes the maximum system configuration supported by this software.

Number of Storage Server Groups	1
Number of Storage Servers	1
Number of cameras	Max. 64 (with RM-64)
Number of simultaneously connected Viewers	Max. 6
Number of cameras that can be used by a Viewer	Max. 64 (same as the max. number of cameras)
Number of camera video that can be simultaneously displayed by a Viewer	Max. 64

Notes on the Software

■ Compatibility with Network Video Recorder VK-64/16/Lite

Notes on Installation

This software cannot exist with VK-64/16/Lite on the same computer. Do not install this software onto a computer where VK-64/16/Lite is installed. You can install this software after uninstalling VK-64/16/Lite. However, please be aware of the following:

- You cannot use the cameras and recording schedule settings you added with VK-64/16/Lite. You must add and configure the cameras and schedules again.
- You cannot use the recording files and event information associated with VK-64/16/Lite.
- You cannot play back recordings made with VK-64/16/Lite.
- This software requires a computer with specifications that are higher than those required for VK-64/16/Lite. The computer used for VK-64/16/Lite may not meet the operation requirements for this software.

Notes on Protocol Compatibility

This software is not compatible with VK-64/16/Lite protocols, because the protocol used between the Viewer and the Storage Server has been significantly changed. Therefore, you cannot connect to a VK-64/16/Lite Storage Server from the Viewer in this software. Similarly, you cannot connect to this software's Storage Server from the Viewer in VK-64/16/Lite.

Notes on Recording Data and Event Data Compatibility

This software uses event data and recording file formats that are different from VK-64/16/Lite. VK-64/16/Lite recordings can be played back using QuickTime. However, the recordings for this software are not supported by QuickTime. Note, however, that you can use QuickTime to play back a .mov file created using the [Extract Video] feature in this software.

System Configuration Example

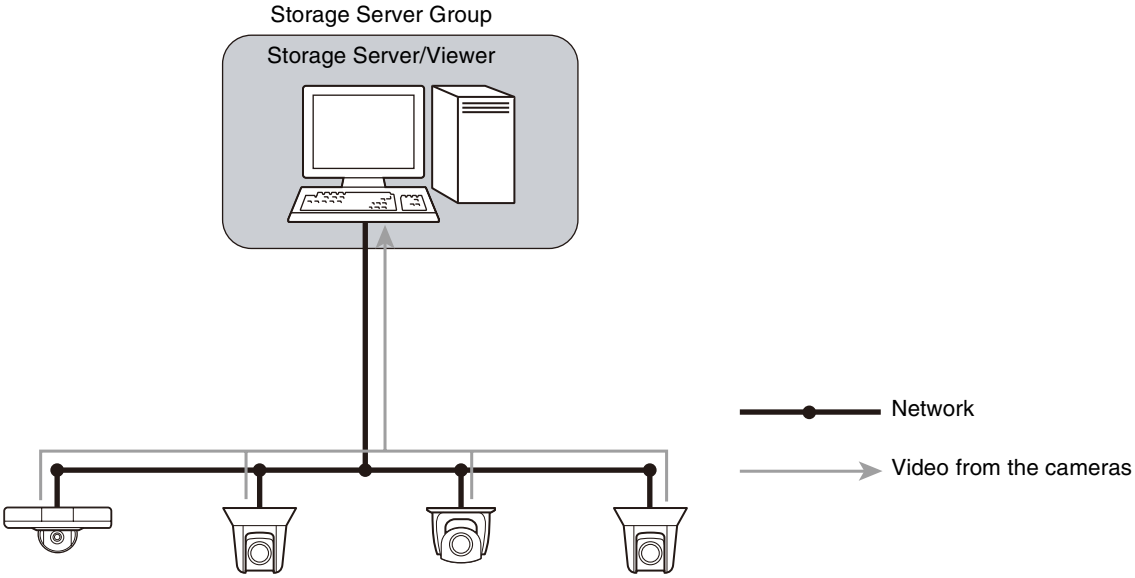
This software records video from cameras using an IP network, such as a LAN.

Important

- The load on the Storage Server may increase depending on the number of cameras connected and the recording settings. See “Determining the Capacity of the Storage Server” (p. 25) to consider your configuration.
- Accessing one camera or Storage Server from many Viewers at the same time may affect system performance.
- Regularly check that the time setting is correct on the computers that are running the Storage Server and the Viewer. Also, before changing the time setting on the computers, be sure to first stop the Storage Server and Viewer. See “Stopping the Storage Server” (p. 119) for details about how to stop the Storage Server.

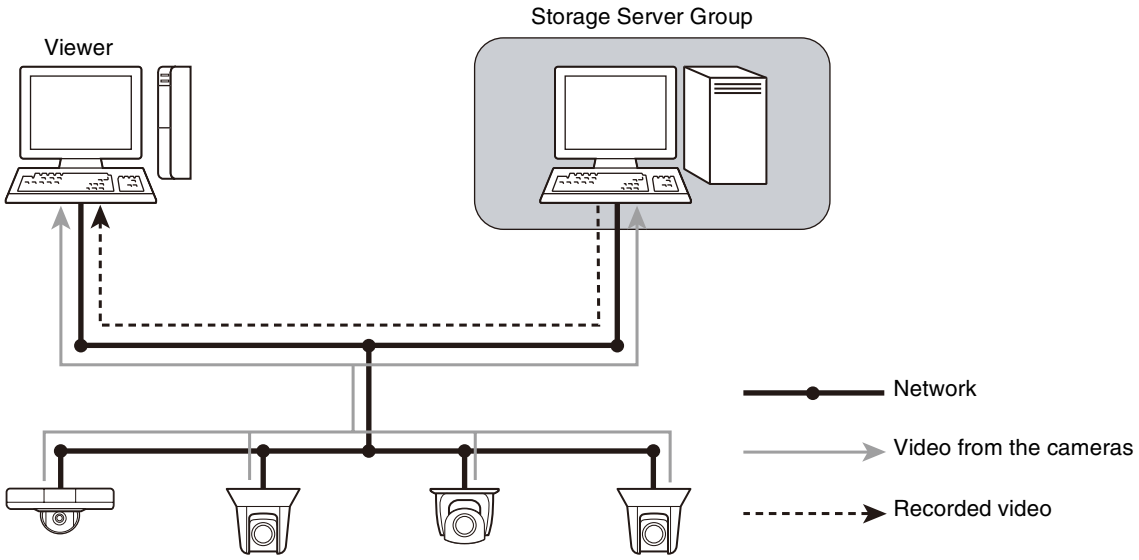
Configuration Example 1: Storage Server and Viewer Installed on One Computer

This example shows the simplest system configuration, where the Storage Server and Viewer are installed on one computer. Video from the cameras is displayed or recorded using the same computer.



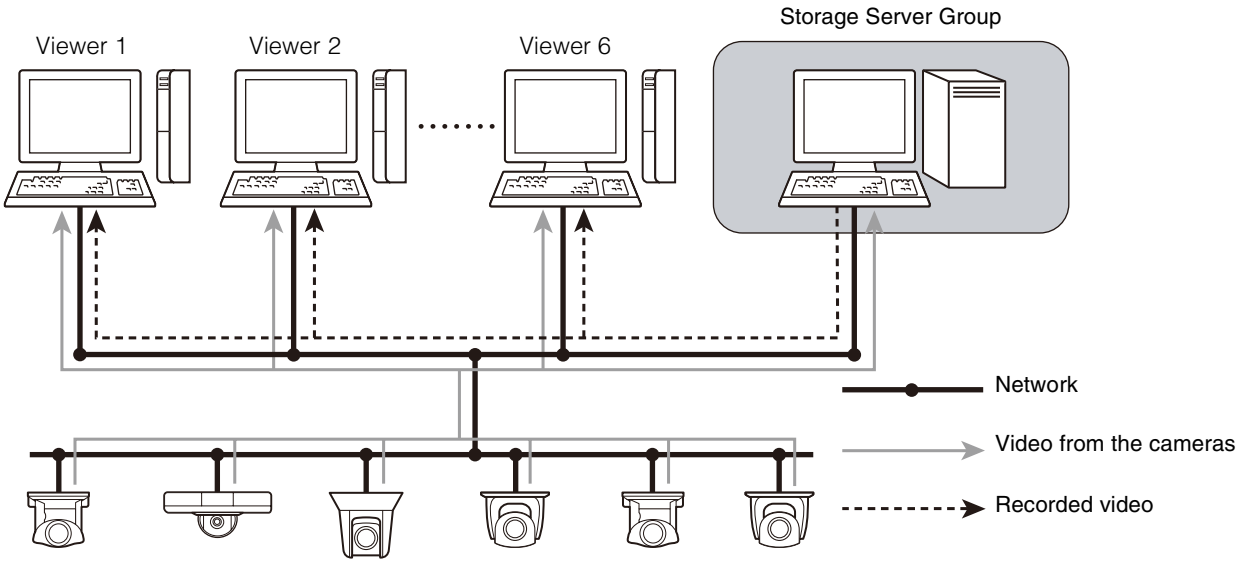
Configuration Example 2: Storage Server and Viewers Installed on Multiple Networked Computers

You can install Storage Servers and Viewers on multiple computers on the network.



Configuration Example 3: Viewers Installed on Multiple Networked Computers

By setting up more than one Viewer, you can simultaneously view a video at more than one location.



System Design

Determining the Capacity of the Storage Server

You must determine the configuration of your Storage Server based on the recording and playback data volume per second and the required hard disk capacity.

Important

The operating performance of this software varies depending on factors such as the usage conditions and the hardware specifications of the Storage Server. Perform system design after referring to "For High-reliability/H.264 Video Format Systems" (p. 14).

■ Hard disk capacity requirements

It is assumed that you use continuous recording at a fixed frame rate (number of video per second), video size and quality. The size of the recording data varies depending on the camera configuration (video quality and video size settings). The size of the recording data varies depending on the camera configuration (video quality and video size settings). Also, the video data size used for calculating the recording data size may vary from the actual video.

Follow these steps to determine the required hard disk capacity.

1 Decide on the number of cameras and the video size for recording.

2 Decide on the video quality for each camera.

The higher the video quality setting, the higher the video quality and resulting data volume.

3 Decide on the frame rate required for recording.

For general security purposes, you can use 1 to 2 fps. Higher frame rates require more hard disk space.

4 Decide on the number of hours per day to record and the number of days to store the recorded data.

5 After deciding on the above parameters, calculate the required hard disk capacity based on the recording data size (in KB).

6 If you will also record audio, be sure to calculate the additional amount of hard disk space required for the audio.

We recommend that you add more than 20% space to the calculated hard disk capacity.

Sample calculations for each video format are shown below, assuming 1000 Kbps = 1 Mbps for the network bandwidth, and 1024 KB = 1 MB for the disk capacity.

Example 1: JPEG recording

- Video recording from 16 cameras (VB-S30D)
- Video size is 320 x 240 and video quality is 3 (data size per frame: 9.16 KB)
- Recording frame rate is 2 fps
- Data size per second is approximately 18.32 KB (= 9.16 KB x 2 fps)
  Although the actual recording data size depends on the objects recorded by each camera, this calculation assumes the typical sizes given above.
- Audio is recorded from 2 cameras

If JPEG videos from 16 cameras are recorded at 2 frames per second in continuous recording mode, the required hard disk space is approximately 24.2 GB per day (= 18.32 KB x 16 cameras x 60 seconds x 60 minutes x 24 hours = 25,325,568 KB).
If audio data is recorded using 2 cameras, the required hard disk space is approximately 1.3 GB per day (= 8 KB x 2 cameras x 60 seconds x 60 minutes x 24 hours = 1,382,400 KB).

Example 2: MPEG-4 recording

- Video recording from 8 cameras (VB-C60).
- Video size is 320 x 240 and video quality is 3.
- Recording frame rate is 30 fps.
- Data size per second is approximately 150 KB.
  Although the actual recording data size depends on the objects recorded by each camera, this calculation assumes the typical sizes given above.

If MPEG-4 videos from 8 cameras are recorded at 30 frames per second in continuous recording mode, the required hard disk space is approximately 99 GB per day (= 150 KB x 8 cameras x 60 seconds x 60 minutes x 24 hours = 103,680,000 KB).

Example 3: H.264 recording

- Video recording from 8 cameras (VB-M40).
- Video size is 320 x 240 and video quality is 3.
- Recording frame rate is 30 fps.
- Data size per second is approximately 84 KB.
  Although the actual recording data size depends on the objects recorded by each camera, this calculation assumes the typical sizes given above.

If H.264 videos from 8 cameras are recorded at 30 frames per second in continuous recording mode, the required hard disk space is approximately 55 GB per day (= 84 KB x 8 cameras x 60 seconds x 60 minutes x 24 hours = 58,060,800 KB).

Note that the actual recording file size may be different from the size in the table, depending on the weather conditions and the complexity of the scene. For example, video of an empty corridor would typically result in values smaller than the above values. Conversely, complex scenes, such as a crowded shopping mall, would result in larger values.

■ Data Size and Bit Rate Estimates

The following tables shows typical data sizes per frame (in KB) for various combinations of video quality and size settings.

Estimates of the Data Size for VB-S30D/VB-S31D/VB-S800D/VB-S900F/VB-S805D/VB-S905F (JPEG)

Video Quality	Video Size								
	1080p Category*			720p Category			4:3 Category		
	480 × 270	960 × 540	1920 × 1080	320 x 180	640 x 360	1280 x 720	320 x 240	640 x 480	1280 x 960
1	8.61	27.20	88.29	4.81	13.53	44.73	5.72	17.65	59.38
2	12.74	39.21	122.03	7.03	19.85	63.67	8.30	25.56	82.81
3	16.21	49.54	153.13	8.86	25.31	80.23	10.48	32.32	103.27
4	21.23	65.16	206.25	11.43	33.45	105.81	13.64	42.51	137.26
5	35.95	117.00	392.44	18.85	57.50	192.90	22.84	74.73	256.15

(Unit: KB)

* VB-S805D/VB-S905F not supported.

Estimates of the Bit Rate for VB-S30D/VB-S31D/VB-S800D/VB-S900F/VB-S805D/VB-S905F (H.264)

Firmware V1.2.0 or later

● Video Size: 1080p Category*

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080
1	0.13	0.40	1.27	0.15	0.47	1.51	0.20	0.61	2.03
2	0.18	0.58	1.86	0.21	0.68	2.25	0.29	0.88	3.08
3	0.32	1.04	3.84	0.38	1.25	4.89	0.52	1.72	7.33
4	0.41	1.32	5.25	0.48	1.62	6.86	0.67	2.24	10.77
5	0.56	1.88	8.19	0.67	2.33	11.18	0.93	3.34	18.57

(Unit: Mbps)

* VB-S805D/VB-S905F not supported.

● Video Size: 720p Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720
1	0.07	0.21	0.67	0.08	0.24	0.78	0.12	0.32	1.02
2	0.09	0.30	0.96	0.11	0.34	1.15	0.16	0.46	1.52
3	0.16	0.53	1.88	0.20	0.63	2.30	0.27	0.86	3.26
4	0.20	0.67	2.47	0.25	0.80	3.16	0.34	1.09	4.58
5	0.28	0.92	3.81	0.33	1.11	4.94	0.46	1.55	7.83

(Unit: Mbps)

● Video Size: 4:3 Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960
1	0.09	0.25	0.78	0.11	0.30	0.95	0.15	0.41	1.27
2	0.12	0.36	1.12	0.14	0.42	1.37	0.20	0.57	1.86
3	0.21	0.63	2.20	0.25	0.77	2.78	0.35	1.04	4.11
4	0.25	0.79	2.92	0.31	0.97	3.82	0.44	1.34	5.98
5	0.34	1.10	4.42	0.41	1.34	5.92	0.59	1.92	9.95

(Unit: Mbps)

Firmware older than V1.2.0

● Video Size: 1080p Category*

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080
1	0.13	0.43	1.58	0.16	0.52	2.04	0.22	0.74	3.21
2	0.18	0.58	2.12	0.22	0.70	2.73	0.30	0.97	4.17
3	0.32	1.04	3.94	0.38	1.25	5.17	0.53	1.73	8.10
4	0.41	1.32	5.30	0.48	1.62	7.07	0.67	2.24	11.40
5	0.56	1.88	8.19	0.67	2.33	11.18	0.93	3.34	18.84

(Unit: Mbps)

* VB-S805D/VB-S905F not supported.

● Video Size: 720p Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720
1	0.07	0.22	0.74	0.08	0.26	0.92	0.12	0.36	1.35
2	0.10	0.30	1.02	0.11	0.36	1.26	0.16	0.49	1.78
3	0.16	0.53	1.90	0.20	0.63	2.34	0.28	0.86	3.43
4	0.20	0.67	2.47	0.25	0.80	3.16	0.34	1.09	4.67
5	0.28	0.92	3.81	0.33	1.11	4.94	0.47	1.55	7.83

(Unit: Mbps)

● Video Size: 4:3 Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960
1	0.09	0.27	0.95	0.11	0.34	1.23	0.16	0.48	1.95
2	0.12	0.37	1.25	0.15	0.45	1.60	0.21	0.63	2.45
3	0.21	0.63	2.20	0.25	0.77	2.88	0.35	1.06	4.48
4	0.25	0.79	2.92	0.31	0.97	3.82	0.44	1.35	6.07
5	0.34	1.10	4.42	0.41	1.34	5.92	0.59	1.92	9.95

(Unit: Mbps)

Estimates of the Data Size for VB-H43/VB-H630VE/VB-H630D/VB-H730F/VB-M42/VB-M620VE/VB-M620D/VB-M720F (JPEG)

Video Quality	Video Size								
	1080p Category*			720p Category			4:3 Category		
	480 × 270	960 × 540	1920 × 1080	320 x 180	640 x 360	1280 x 720	320 x 240	640 x 480	1280 x 960
1	9.41	31.58	106.54	5.22	15.08	53.01	6.25	20.11	70.14
2	14.22	47.37	151.37	7.69	22.94	78.52	9.33	30.40	101.32
3	18.38	60.59	190.30	9.74	29.58	99.89	11.95	39.08	127.78
4	24.22	79.96	252.56	12.62	39.14	131.42	15.57	51.54	168.77
5	40.78	139.10	464.17	20.86	66.61	232.87	25.99	88.50	305.32

(Unit: KB)

* VB-M42/VB-M620VE/VB-M620D/VB-M720F not supported.

Estimates of the Bit Rate for VB-H43/VB-H630VE/VB-H630D/VB-H730F (H.264)

● Video Size: 1080p Category*

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080
1	0.16	0.51	1.62	0.19	0.59	1.91	0.26	0.77	2.57
2	0.21	0.65	2.06	0.24	0.76	2.47	0.33	0.99	3.39
3	0.34	1.09	3.70	0.40	1.29	4.57	0.55	1.71	6.60
4	0.49	1.60	5.77	0.57	1.93	7.39	0.79	2.62	11.35
5	0.80	2.88	11.53	0.96	3.56	15.59	1.34	5.21	26.35

(Unit: Mbps)

Estimates of the Bit Rate for VB-H43/VB-H630VE/VB-H630D/VB-H730F/VB-M42/VB-M620VE/VB-M620D/VB-M720F (H.264)

● Video Size: 720p Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720	320 x 180	640 x 360	1280 x 720
1	0.08	0.26	0.84	0.10	0.31	0.99	0.14	0.41	1.30
2	0.11	0.34	1.08	0.13	0.39	1.27	0.18	0.52	1.68
3	0.17	0.56	1.86	0.21	0.66	2.24	0.28	0.88	3.06
4	0.24	0.80	2.81	0.29	0.95	3.47	0.39	1.29	5.01
5	0.39	1.35	5.55	0.48	1.63	7.16	0.65	2.27	11.42

(Unit: Mbps)

● Video Size: 4:3 Category

Video Quality	I-Frame Interval: 1 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960	320 x 240	640 x 480	1280 x 960
1	0.11	0.33	1.03	0.13	0.39	1.24	0.19	0.52	1.67
2	0.14	0.42	1.31	0.16	0.49	1.58	0.23	0.65	2.16
3	0.22	0.68	2.22	0.26	0.80	2.77	0.37	1.08	4.02
4	0.30	0.96	3.46	0.36	1.15	4.41	0.51	1.59	6.73
5	0.48	1.66	6.72	0.59	2.03	9.03	0.83	2.90	15.05

(Unit: Mbps)

Estimates of the Data Size for VB-H41/VB-H610VE/VB-H610D/VB-H710F (JPEG)

Video Quality	Video Size			
	320 × 240	480 × 270	960 × 540	1920 × 1080
1	5.61	9.55	32.89	114.04
2	8.09	14.50	49.92	164.28
3	10.02	18.74	64.10	210.29
4	12.91	24.75	84.59	285.32
5	20.91	41.63	148.50	528.67

(Unit: KB)

Estimates of the Bit Rate for VB-H41/VB-H610VE/VB-H610D/VB-H710F (H.264)
Firmware V1.3.0 or later

Video Quality	I-Frame Interval: 0.5 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080
1	0.24	0.82	2.65	0.28	0.95	3.18	0.34	1.13	4.13
2	0.35	1.19	4.03	0.41	1.41	4.95	0.51	1.72	6.73
3	0.54	1.87	6.71	0.64	2.24	8.65	0.80	2.84	12.64
4	0.82	2.96	11.62	0.98	3.63	15.40	1.23	4.83	25.01
5	1.26	4.89	20.68	1.51	6.23	28.55	1.96	9.20	40.18

(Unit: Mbps)

Firmware older than V1.3.0

Video Quality	I-Frame Interval: 0.5 sec.								
	Frame Rate: 10 fps			Frame Rate: 15 fps			Frame Rate: 30 fps		
	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080	480 × 270	960 × 540	1920 × 1080
1	0.24	0.84	2.88	0.29	0.99	3.58	0.36	1.21	5.04
2	0.36	1.22	4.22	0.42	1.45	5.37	0.53	1.80	7.65
3	0.55	1.91	7.02	0.65	2.31	9.13	0.82	2.95	13.74
4	0.83	2.99	12.01	0.99	3.72	16.29	1.27	5.01	26.73
5	1.27	5.01	21.62	1.53	6.41	30.26	2.00	9.58	43.06

(Unit: Mbps)

Estimates of the Data Size for VB-M40/VB-M600VE/VB-M600D/VB-M700F (JPEG)

Video Quality	Video Size			
	160 × 120	320 × 240	640 × 480	1280 × 960
1	2.33	5.89	19.73	69.59
2	3.55	10.01	33.82	111.71
3	4.37	12.83	43.37	141.96
4	5.47	16.76	57.03	190.44
5	8.65	27.72	97.08	338.58

(Unit: KB)

Estimates of the Bit Rate for VB-M40/VB-M600VE/VB-M600D/VB-M700F (H.264)

Video Quality	Video Size and Frame Rate								
	10 fps			15 fps			30 fps		
	320 × 240	640 × 480	1280 × 960	320 × 240	640 × 480	1280 × 960	320 × 240	640 × 480	1280 × 960
1	0.07	0.24	0.84	0.10	0.33	1.20	0.18	0.59	2.21
2	0.12	0.39	1.27	0.16	0.53	1.77	0.28	0.91	3.31
3	0.21	0.67	2.15	0.28	0.91	3.05	0.47	1.56	5.54
4	0.29	0.97	3.23	0.38	1.31	4.56	0.65	2.18	8.20
5	0.38	1.36	4.87	0.52	1.88	6.93	0.87	3.14	12.39

(Unit: Mbps)

Estimates of the Data Size for VB-C500VD/VB-C500D/VB-C60 (JPEG)

Video Quality	Video Size		
	160 × 120	320 × 240	640 × 480
1	3.5	9.6	27.5
2	4.0	11.0	31.7
3	4.4	12.5	35.8
4	5.6	16.4	47.8
5	15.8	52.7	171.4

(Unit: KB)

Estimates of the Bit Rate for VB-C500VD/VB-C500D/VB-C60 (MPEG-4)

Video Quality	Video Size and Frame Rate					
	10 fps		15 fps		30 fps	
	320 × 240	640 × 480	320 × 240	640 × 480	320 × 240	640 × 480
1	0.28	0.76	0.35	0.94	0.54	1.43
2	0.39	1.08	0.50	1.30	0.78	2.02
3	0.60	1.67	0.75	2.02	1.20	3.31
4	0.69	1.93	0.91	2.43	1.38	3.98
5	0.81	2.31	1.05	2.87	1.68	4.86

(Unit: Mbps)

Note

The data size for MPEG-4 video may increase when recording video with quick movements.

Estimates of the Data Size for VB-C300 (JPEG)

Video Quality	Video Size		
	160 × 120	320 × 240	640 × 480
1	3.2	8.8	24.2
2	3.7	10.2	28.3
3	4.1	11.5	32.0
4	5.3	15.4	43.2
5	15.5	52.8	170.6

(Unit: KB)

Estimates of the Data Size for VB-C50i/VB-C50iR/VB-C50FSi (JPEG)

Video Quality	Video Size		
	160 × 120	320 × 240	640 × 480
30	3.1	8.2	24.7
40	3.6	9.7	29.8
50	4.1	10.9	34.2
60	4.6	12.5	40.3
70	5.3	14.8	49.7
80	6.5	18.8	64.9
90	9.4	28.4	106.4

(Unit: KB)

Important

The actual data size may increase or decrease depending on the objects being recorded. Make sure to confirm the data size for the actual system environment before starting operation.

C50F C50i

Note that the data size may increase significantly when the video quality is set to [100].

C300 C50F C50i

Select [View] > [Video Information] in the Viewer included with the camera to display the data size per frame.

Sensor Recording, Motion Detection Recording, Intelligent Function Recording and Volume Detection Recording

RM-64/25/9

■ Notes on Using Sensor Recording, Motion Detection Recording, Intelligent Function Recording and Volume Detection Recording

When an event occurs, data is saved in the Storage Server as an operation record. As the number of operation records increases, operation during event detection and the search and Viewer response speeds may be affected.

Note

Use “Maximum events processed” (p. 15), described in “Operating Environment” > “For High-reliability/H.264 Video Format Systems,” as a guide.

■ Notes on Using Motion Detection Recording / Intelligent Function Recording

- The motion detection feature notifies you there is motion in an area when motion is not ordinarily expected. Do not use this feature for busy areas where motion detection may be triggered frequently.
- Configure motion detection on the camera side. If you configure motion detection on the Storage Server side, the load on the Storage Server may increase, resulting in decreased recording performance.

■ Notes on Storage Server Operation

We recommend that you dedicate the Storage Server computer exclusively to running this software.
Be sure to avoid the following on the Storage Server computer:

- Running Web server software on the computer
  You cannot operate the Storage Server on a computer where Web server software such as Windows standard IIS (Internet Information Server) or Apache is already installed.
  The Storage Server uses HTTP protocol to communicate with cameras. Therefore, the Storage Server may not work normally if other Web service applications exist on the same computer.
  The HTTP port used by this software is 80 and cannot be changed.
- Running database server software (e.g., SQL Server, Oracle) on the computer
  Database processing can place a load on the hard disk that may affect recording performance. Conversely, this software may affect database server performance when it performs tasks that place a load on the hard disk.
- Using the computer as a file server
  The hard disk is frequently accessed when the computer is used as a file server, and this may affect recording performance. In addition, the Storage Server is more likely to run out of disk capacity if the computer is operated as a file server.
- Running other applications on the computer
  The additional processing load from running applications other than this software may affect recording performance.
  This software uses the TCP port numbers 80, 443, 11080 and 2380. These ports should not be used by other applications.

Calculating Network Bandwidth

You need to consider the network bandwidth if you want to use a network camera for both recording and live view.
You must calculate the network bandwidth both for the Storage Server and the Viewer.
When using the VB-H41 for example, calculate the bandwidth as follows if you use one Storage Server (320 x 240 1 fps) and two Viewers (320 x 240 5 fps):

- Bandwidth for recording
  10.8 (KB/frame) x 1 (frames/sec.) x 8 (bits) = 86.4 Kbps
- Bandwidth for live view (per Viewer)
  10.8 (KB/frame) x 5 (frames/sec.) x 8 (bits) = 432 Kbps

Therefore, the required network bandwidth is calculated as follows:
86.4 Kbps x 1 + 432 Kbps x 2 = 950.4 Kbps (approx. 0.9 Mbps)

About RM-Lite

RM-Lite is a simpler version of this software that is included with the camera. RM-Lite provides the same basic features as the RM-64/25/9 product versions, but some of the functionality has be limited, as described below:

Important

- Files recorded using RM-Lite can be played back when an upgrade is made to RM-64/25/9. However, files recorded with RM-64/25/9 cannot be played back with RM-Lite.
- An RM-Lite viewer cannot connect to an RM-64/25/9 Storage Server. Similarly, an RM-64/25/9 viewer cannot connect to an RM-Lite Storage Server.

■ Functional limitations for RM-Lite

- You can add a maximum of four cameras.
- You can display a maximum of eight video windows in the Viewer. A warning message is displayed if you display nine or more video windows.
- The maximum frame rate is as follows:
  Recording 5 fps or lower (JPEG)
  Record Now 5 fps
- The frame rate adjustment feature is always enabled under high load.
- The maximum file size is 1 GB (max. 24 hours).
- You cannot change the [Background] property in [Layout Properties], and live view is the only playback option.
- You cannot configure [Each Tag], [All Cameras] and [Recording Cameras] in [Organize Layouts].
- AXIS Q7404/Q7401 is not supported.

■ Features that cannot be used in RM-Lite

Storage Server

- MPEG-4 and H.264 recording
- Motion detection recording
- Sensor recording
- Intelligent function recording
- Volume detection recording
- Special Day schedule recording
- Sending e-mail when an event occurs
- Customizing event priority
- Adding user groups and configuring access permissions

Viewer

- Multiple display support
- Layout sequences
- Display of multiple tabs
- Custom grid
- Dynamic layouts
- Searching using camera tags
- Advanced search feature of Event Search
- Event Notification - Operator Notification, Acknowledge Event
- Display of a video window when an event occurs.

C300 C50F C50i RM-Lite is not included with the camera.

■ Specification comparison for RM-64/25/9 and RM-Lite

Features		RM-64/25/9	RM-Lite
Connection to camera	Max. number of cameras	64/25/9	4
	Supported cameras	VB-S30D, VB-S31D, VB-S800D, VB-S900F, VB-S805D, VB-S905F, VB-H43, VB-H630VE, VB-H630D, VB-H730F, VB-H41, VB-H610VE, VB-H610D, VB-H710F, VB-M42, VB-M620VE, VB-M620D, VB-M720F, VB-M40, VB-M600VE, VB-M600D, VB-M700F, VB-C500VD, VB-C500D, VB-C60, VB-C300, VB-C50Fi, VB-C50FSi, VB-C50i, VB-C50iR, AXIS Q7404/ Q7401	VB-S30D, VB-S31D, VB-S800D, VB-S900F, VB-S805D, VB-S905F, VB-H43, VB-H630VE, VB-H630D, VB-H730F, VB-H41, VB-H610VE, VB-H610D, VB-H710F, VB-M42, VB-M620VE, VB-M620D, VB-M720F, VB-M40, VB-M600VE, VB-M600D, VB-M700F, VB-C500VD, VB-C500D, VB-C60, VB-C300, VB-C50Fi, VB-C50FSi, VB-C50i, VB-C50iR
	Automatic camera search	Yes	
Storage Server	Recording formats	JPEG, MPEG-4, H.264	JPEG only
	Max. recording frame rate	30 fps *1	5 fps
	Recording schedule	Weekly schedule recording Special Day schedule recording	Weekly schedule recording
	Recording mode	Continuous recording Sensor recording Motion detection recording Intelligent function recording Volume detection recording Manual recording (Record Now)	Continuous recording Manual recording (Record Now)
	Max. file size setting	Configurable 512 or 1024 MB, 1 to 24 hours (default: 1024 MB)	Fixed 1 GB (1024 MB), 24 hours
	Max. storage period	99 weeks	90 days (12 weeks)
	Others	—	The following features are not supported: • Sending e-mail when an event occurs • Customizing event priority
Viewer	Supported live view formats	JPEG, MPEG-4, H.264	
	Max. display frame rate	30 fps *1	
	Multiple display support	Yes	No
	Number of simultaneous video windows	32 or fewer per layout *2	8 or less is recommended.
	Audio recording/playback	Yes	
	Layout sequence feature *3	Yes	No

*1 The operational limits depend on factors, such as the number of cameras, Storage Server performance, hard disk capacity, and network load.

*2 The maximum number of Dynamic Layout windows that can be displayed is 25.

*3 The layout sequence feature is a function for changing Viewer layouts at a specified interval.

Chapter 2

Setup

❏ How to install the software
❏ Settings after installation

Installation

Before Installation

About Licenses

You must have one license per installed computer.
To add Viewers, you must purchase the required number of licenses separately (p. 21).

Use an NTFS Formatted Drive

The drive you install the software on and the drive for saving recorded video must be in NTFS format.

Set Up the Cameras

You must set up any cameras that you will use with this software before starting operation. For details, refer to the camera manual.

Stop Other Applications

Stop other applications that are running on the computer, such as anti-virus software, before installing the software.

Create a Backup

Before upgrading or reinstalling the software, it is recommended that you create a backup. For details on backup, see Chapter 8: Backup.

How to Install the Software

Important

You must log on to the computer as a computer administrator to install this software.

1 Insert the installation CD-ROM into the CD drive.

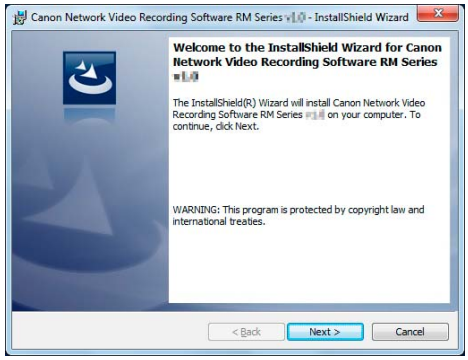
This starts the installer automatically. If the installer does not automatically start, open the CD-ROM directory using Windows Explorer and double-click RM32setup.exe.

Note

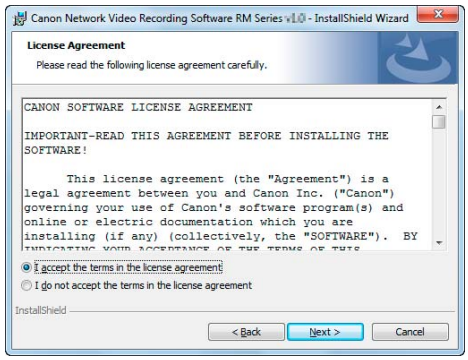
- Lite Double-click RMLiteInstall.exe in the [Applications] folder on the setup CD-ROM included with the camera.
- When the [User Account Control] dialog box appears, click [Yes] or [Continue].
- On computers running Windows 7, Windows Vista or Windows Server 2008, if .NET Framework 3.5 is not installed, a dialog box is displayed asking you to install .NET Framework 3.5 Click [Install] to start installation of .NET Framework 3.5.

  Lite .NET Framework 3.5 is not automatically installed. Download the install file from the Microsoft download center and install it, or use the installer in the [Applications] folder on the setup CD-ROM included with the camera.

2 Click [Next].

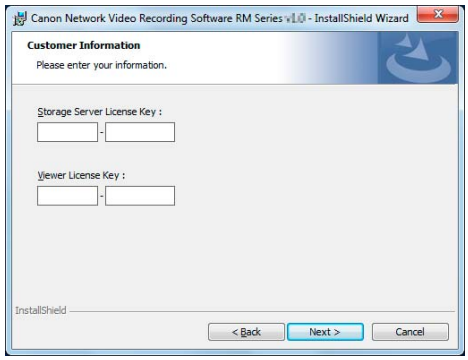


3 Read the license agreement carefully. Click [I accept the terms in the license agreement], if you accept them, and then click [Next] to continue.



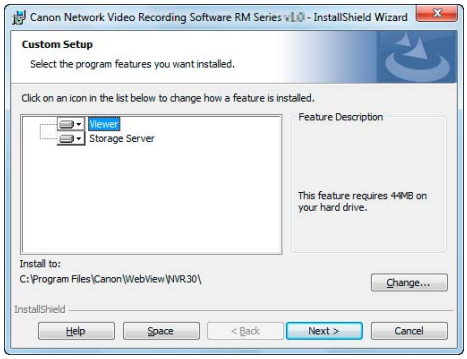
4 Enter your license key(s) and click [Next].

The Storage Server, Viewer, or both are installed, depending on the license key(s) you entered.



Lite The license key input dialog box is not displayed. Instead, enter your name and affiliation in the dialog box that is displayed and click [Next].

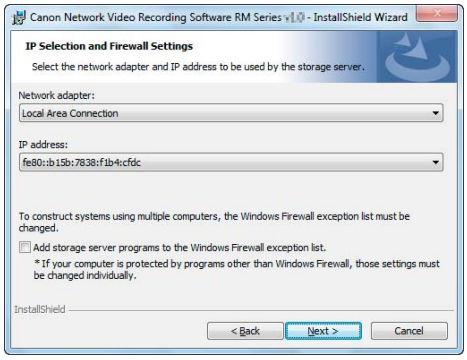
5 Click [Next].



Note

- You can click [Change] to change the destination folder. However, we recommend that you do not change the destination.
- To check the available disk space on each drive of the computer and the disk space required for installation, click [Space].
- Lite A dialog box asking you to specify the software to be installed is displayed. If you click [Complete], proceed to the step 6. If you click [Custom], the sample dialog box above is displayed. Select which application to install, the Storage Server or the Viewer. Click the application that you do not want to install and select [This feature will not be available].

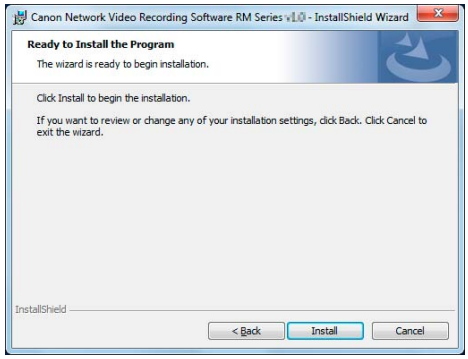
6 Click [Next].



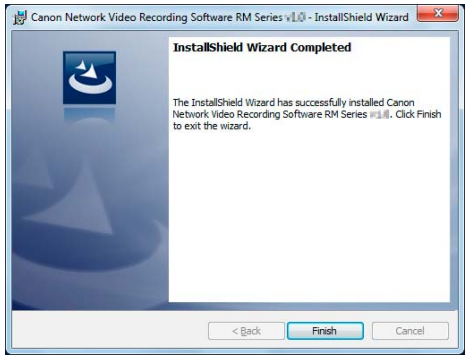
Note

- The IP address you set during installation can be changed using the command line. See “Changing the Storage Server IP Address” (p. 134) for details.
- When installing on a computer that has multiple network interfaces, select the network interface to use in the [Network adapter] list and the assigned IP address in the [IP address] list.
- When starting the Viewer, specify the IP address selected here to connect to the Storage Server Group.
- If you clear the [Add storage server programs to the Windows Firewall exception list.] check box, you need to configure Windows Firewall after the installation is complete. For details, see “Windows Firewall Settings” (p. 41).

7 Click [Install].



8 Click [Finish].



9 Click [Yes] to restart the computer.

An icon appears on your desktop when the installation is complete.

Important

- You must restart the computer to enable the settings that were made during the installation.
- You must configure the operating system after installation. For details, see “Settings After Installation” (p. 41).
- Lite If you reinstall this software after uninstalling it, the setting configurations before uninstallation will not be retained.

Upgrade from an Earlier Version

When upgrading, use the installer of the new version to install the new version on top of the earlier version without uninstalling the earlier version. This preserves the settings such as the added camera information and recording schedule, and recorded data.
Note that if you uninstall the earlier version before installing the new version, you will need to redo all of your camera and recording settings.

Note

License key entry is required when upgrading.

Upgrade from RM-Lite to RM-64/25/9

Installing RM-64/25/9 on a computer where RM-Lite is installed will upgrade it to RM-64/25/9. This preserves the settings such as the added camera information and recording schedule, and recorded data.

Important

RM-Lite cannot exist with RM-64/25/9 on the same computer.

Settings After Installation

Configure the following settings after installing this software according to the operating system you are using:

	Windows 7, Windows Vista	Windows Server 2008, Windows 8, Windows Server 2012
Windows Firewall Setting	✓	✓
Security Level Setting	—	✓
Sound Settings for Using the Audio Feature	—	✓
Warning When Viewer Starts	✓	✓

(✓: Required, —: Not required)

Windows Firewall Settings

If you install the Storage Server and the Viewer on different computers, you must change the Windows Firewall settings on the computer used for the Storage Server.
The changes to the settings are already complete if you selected the [Add storage server programs to the Windows Firewall exception list.] check box during installation. If you did not select the above check box during installation, perform the following procedure to change the Windows Firewall settings.
The following settings are not required if you install the Storage Server and Viewer onto the same computer.

■ When using Windows 7, Windows 8, Windows Server 2008 R2, or Windows Server 2012

1. Click [System and Security] in the [Control Panel], and then click [Windows Firewall].
2. Click [Advanced Settings] to display the [Windows Firewall with Advanced Security] window.
3. Click [Inbound Rules] and select [New Rule] from the [Action] menu to start the [New Inbound Rule Wizard].
4. Click [Port], and then click [Next].
5. Click [TCP] and [Specific local ports], and then enter 80 as the port number. Then click [Next].
6. Click [Allow the connection], and then click [Next].
7. Click [Next].
8. Enter a name (such as the Storage Server or Storage Server Group name) in [Name] and click [Finish].
9. The added inbound rule should be displayed in the [Windows Firewall with Advanced Security] window, with a checkmark icon displayed next to the rule.

■ When using Windows Vista or Windows Server 2008

1. Click [Start] > [Control Panel] to open the [Control Panel].
2. Click [System Security] > [Windows Firewall].

   If the [Control Panel] is set to [Classic View], double click [Windows Firewall].
3. Click [Change settings].

   If the [User Account Control] dialog box is displayed, click [Continue].
4. Click the [Exceptions] tab and click [Add Port].
5. In the [Add a Port] dialog box, enter the name of the Storage Server and 80 as the port number. Make sure that [TCP] is selected and click [OK].
6. Confirm that the added Storage Server is now displayed in the [Windows Firewall] dialog box and that the check box is selected. Then, click [OK].

Security Level Setting

In Internet Explorer, the default security level setting for Internet or intranet sites in Internet Explorer 9 or later, and Windows Server 2008 is “High”. Therefore, you are not able to configure settings in the configuration or top page of the camera. Follow these steps to register the site as a trusted site.

1 Start Internet Explorer and click [Tools] > [Internet Options] to display the [Internet Options] dialog box.

2 Click the [Security] tab.

3 Click [Trusted Sites] and click [Sites].

4 Clear the [Require server verification (https:) for all sites in this zone] check box.

5 Enter the IP address of your camera in [Add this website to the zone] and click [Add].

Note

- For details on registration with trusted sites, click [Learn more about Internet Explorer’s Enhanced Security Configuration] in the [Internet Options] dialog box and refer to the displayed summary.
- JavaScript may be disabled in the standard security setting, even if a content block dialog box is not displayed. This may limit the operation of the setting page or the camera’s Viewer. The JavaScript setting is enabled automatically once trusted site registration is complete.

Sound Settings for Using the Audio Feature

The sound feature is disabled by default in Windows Server 2012, and 2008. To receive audio with the camera’s Viewer, follow these steps to enable the sound feature.

1 Click [Hardware and Sound] in the [Control Panel] and then click [Sound].

If the [Control Panel] in Windows Server 2008 is set to [Classic View], double-click [Sound] and proceed to Step 3.

2 If the [Audio Service Not Running] dialog box is displayed, click [Yes].

3 The [Sound] dialog box is displayed. Select the [Playback] tab and confirm that an appropriate audio device is installed.

If no audio device is installed, refer to the manual for your computer on how to install an audio device.

Warning When Viewer Starts

If [User Account Control] is enabled, the [User Account Control] screen will be displayed when you start the Viewer. Click [Yes] (or [Continue]) to start the Viewer.

Chapter 3

Storage Server Settings

❏ Adding cameras
❏ Configuring the Storage Server Group
❏ Adding users

Flow of Storage Server Settings

Start the Viewer (p. 45)

↓

Configure a Storage Server Group

Display the [Storage Server Group Settings] dialog box (p. 47)

↓

Change the Storage Server Group name (p. 47)
Configure the recording settings (p. 47)
Configure the event priority and e-mail notifications (p. 48) RM-64/25/9

↓

Configure a Storage Server

Display the [Servers] tab (p. 51)

↓

Specify the storage period for recorded video (p. 51)
Change the destination of the recording file and the maximum disk usage (p. 52)

↓

Add a camera

Display the [Cameras] tab (p. 53)

↓

Add cameras one at a time (p. 53)

Search for and add cameras (p. 54)

↓

Add a user

Display the [Users] tab (p. 57)

↓

Add a user (p. 58)

Add a user group and specify its access permissions (p. 59) RM-64/25/9

Important

We strongly recommend that only one administrator configure the Storage Servers on each network.

Start the Viewer

Important

- The Viewer cannot be started on its own. Be sure to start the Viewer in an environment that allows it to connect to the Storage Server.
- You must log on as a computer administrator to configure the Storage Server from the Viewer.
- Check to make sure that other users are not connected to the Storage Server before configuring it from the Viewer.

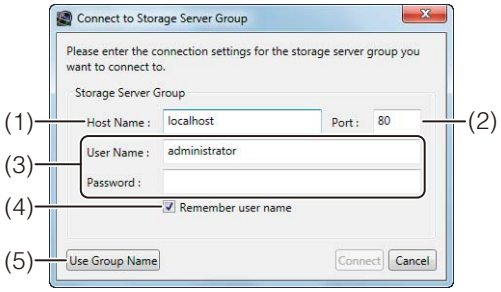
1 Double-click the [RM Viewer] icon on your desktop.

Lite Double-click the [RM-Lite Viewer v3.2] icon on your desktop

Note

If the [User Account Control] dialog box appears, click [Yes] (or [Continue]).

2 Specify the information required to connect to the Storage Server Group.



(1) [Host Name]
Enter the host name or the IP address of the Storage Server Group. If the Viewer and the Storage Server are installed on the same computer, enter “localhost”.

Note

Enter the Storage Server name or the IP address selected when installing the Storage Server.

(2) [Port]
Normally, leave [80] unchanged.

(3) [User Name], [Password]
Enter your user name and password.
The default user name and password are:
User Name: administrator
Password: NVR

(4) [Remember user name]
Select the check box if you want the software to remember the user name.

(5) [Use Group Name]
Click to specify a Storage Server Group name for the connection.

3 Click [Connect].

Important

- You should change the password for the default user (administrator) as a security measure. For details on how to change the password, see “Add a User” (p. 57).
- Be sure to remember your password.
- You must start the Viewer while logged on as a user in the Administrator user group to be able to set up the Storage Server.

Note

- The first time you connect to the Storage Server Group, you must enter the host name and port number. However, from the second time onward, you can simply specify the Storage Server Group name (p. 46).
- If there are no cameras added, a message is displayed asking if you want to add a camera. Click [Yes] to display the [Add Camera] dialog box and start adding a camera on the network. For details, see “Add Cameras One at a Time” (p. 53).
- When there is a time difference of 5 seconds or longer between the Storage Server and the Viewer computer, a message prompting you to synchronize them will appear. Adjust the system time of the Viewer computer to the time of the Storage Server. You can disable the message display in [Viewer Settings]. For details, see “Configure the Viewer Display and Operation Settings” (p. 63).
- You can configure the Viewer to start without displaying the startup screen or the [Connect to Storage Server Group] dialog box. For details, see “Create a Shortcut Icon for Starting the Viewer” (p. 134).

■ Specify the Storage Server Group for Starting the Viewer

You can start the Viewer using a Storage Server Group name instead of the host name of the server.

1 Double-click the [RM Viewer] icon on the desktop.

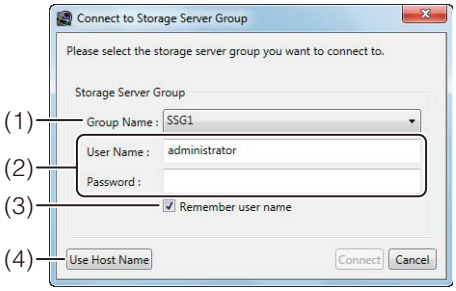
Lite Double-click the [RM-Lite Viewer v3.2] icon on your desktop

Note

If the [User Account Control] dialog box appears, click [Yes] (or [Continue]).

2 Click [Use Group Name].

3 Specify the information required to connect to the Storage Server Group.



(1) [Group Name]
Display the Storage Server Group name.

(2) [User Name] and [Password]
Enter the use name and password.
The default user name and password are:
User Name: administrator
Password: NVR

(3) [Remember user name]
Select the check box if you want the software to remember the user name.

(4) [Use Host Name]
Click to specify a host name of the Storage Server for the connection.

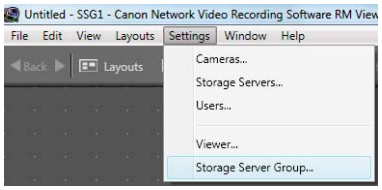
4 Click [Connect].

Configure a Storage Server Group

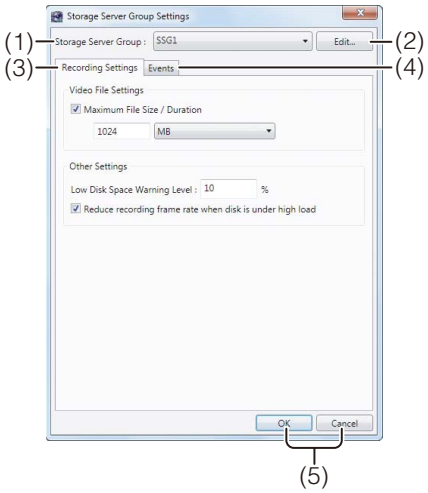
You can configure the recording method and event priority.

Display the [Storage Server Group Settings] Dialog Box

1 Click [Settings] > [Storage Server Group].



The [Storage Server Group Settings] dialog box is displayed.



(1) [Storage Server Group]
Display the Storage Server Group name.

(2) [Edit]
Change the name of Storage Server Group.

(3) [Recording Settings] tab
Make settings for recording files and notifications of available disk space.

(4) [Events] tab
Configure the method for processing events for a Storage Server.

(5) [OK] and [Cancel]
Close the dialog box.

Change the Storage Server Group Name

1 Click [Edit] to display the [Edit Storage Server Group Name] dialog box.

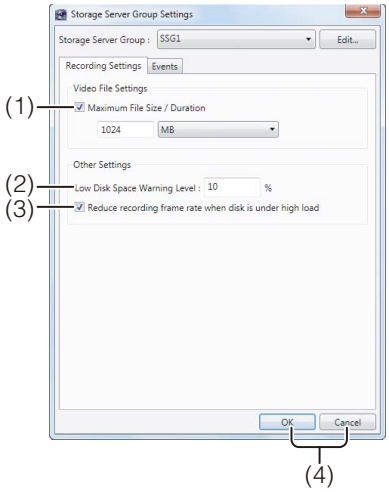
2 Change the Storage Server name and click [OK].

Configure the Recording Settings

Configure the recording settings, such as the maximum recording file size.

1 Click the [Recording Settings] tab.

2 Configure the recording settings.



(1) [Maximum File Size / Duration]
Specify the maximum size or the maximum recording duration for the recording file.
You can set a maximum file size of 512 MB or 1024 MB, and a maximum recording duration of 1 to 24 hours.

(2) [Low Disk Space Warning Level]
Specify when to notify the user of low available disk space as a percentage of the maximum disk usage.

(3) [Reduce recording frame rate when disk is under high load]
Select the check box to decrease the frame rate automatically when the system load is high.

(4) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

Lite

- The maximum size is fixed at 1 GB (1024 MB) and the maximum duration is fixed at 24 hours.

- [Reduce recording frame rate when disk is under high load] is always enabled. You cannot disable it. You can confirm whether the frame rate has been automatically reduced by checking the [Live Events Log]. (An e-mail notification is not sent.)

Important

An event is triggered when the available disk space reaches the value specified in [Low Disk Space Warning Level].

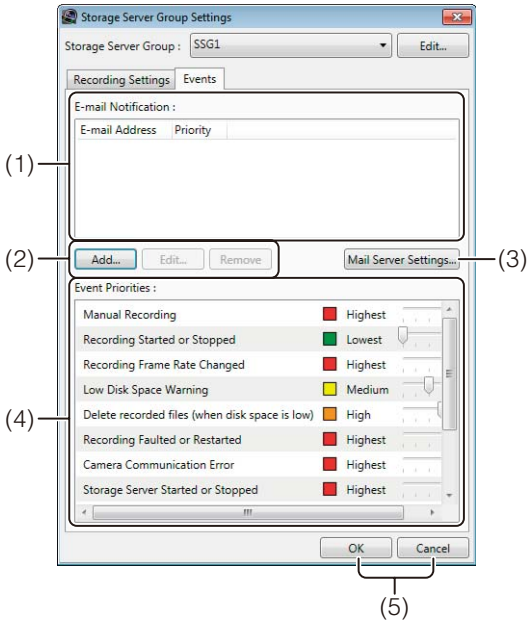
Note

Select [Reduce recording frame rate when disk is under high load] to trigger an event when the recording frame rate decreases.

Configure Event Priorities and E-mail Notifications RM-64/25/9

Configure the priority of an event that occurs in the Storage Server Group.

1 Select the [Events] tab.



(1) [E-mail Notification]
Display a list of e-mail addresses for sending notification messages when an event is triggered, and the priority of the event.

(2) [Add], [Edit], and [Remove]
Add, edit or remove an e-mail notification destination.

(3) [Mail Server Settings]
Configure the mail server used for notifications.

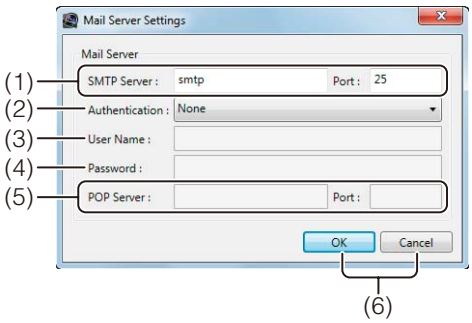
(4) [Event Priorities]
Configure the event priorities.

(5) [OK] and [Cancel]
Close the dialog box.

■ Configure the Mail Server

1 Click [Mail Server Settings] to display the [Mail Server Settings] dialog box.

2 Configure the mail server settings.



(1) [SMTP Server] and [Port]
Enter an SMTP server name and change the port number, as required.

(2) [Authentication]
Specify an SMTP server authentication method ([None], [POP before SMTP], [SMTP-AUTH]).

(3) [User Name]
If [POP before SMTP] or [SMTP-AUTH] is selected in [Authentication], enter a user name to be used for authentication.

(4) [Password]
Enter a password to be used for authentication with the user name entered in (3).

(5) [POP Server] and [Port]
If [POP before SMTP] is selected in [Authentication], enter the name of the POP server to be used for authentication and the port number, as required.

(6) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

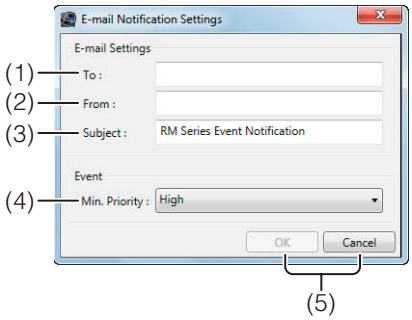
Note

If [POP before SMTP] is selected in [Authentication], the Storage Server performs POP authentication before sending an e-mail message.

■ Add an E-mail Notification Destination

1 Click [Add] in the [Events] tab of the [Storage Server Group Settings] dialog box to display the [E-mail Notification Settings] dialog box.

2 Configure the e-mail notification settings.



(1) [To]
Enter an e-mail address as the destination.

(2) [From]
Enter the e-mail address of the sender.

(3) [Subject]
Enter the subject of the e-mail.

(4) [Min. Priority]
Specify the minimum event priority level which will generate an e-mail notification.

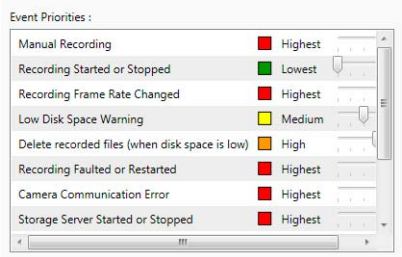
(5) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

The e-mail address for the specified destination and the event priority are added to the [E-mail Notification] list.

■ Specify the Event Priority

Change the priority depending on the event type using [Event Priorities] in the [Events] tab. E-mail notification is performed according to the specified priorities.



Click or drag the slider for each event to change the priority.
The priority can be set to one of the following five levels:

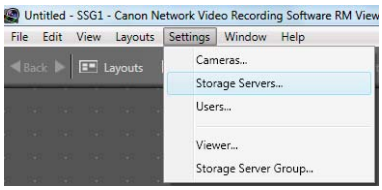
Level Value	Color
Highest	Red
High	Orange
Medium	Yellow
Low	Light Green
Lowest	Green

Configure a Storage Server

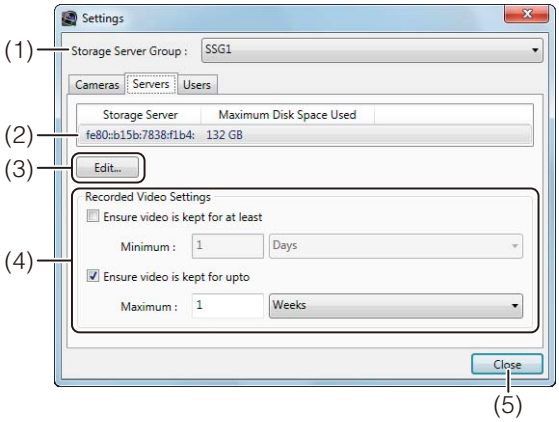
You can specify the storage period of the recorded video and the maximum disk usage.

Display the [Servers] Tab

1 Click [Settings] > [Storage Servers].



The [Servers] tab is displayed in the [Settings] dialog box.



(1) [Storage Server Group]
Display the Storage Server Group name.

(2) List of Storage Servers
Display a list of Storage Servers.

(3) [Edit]
Edit a Storage Server.

(4) [Recorded Video Settings]
Specify the minimum and maximum storage period for recorded video.

(5) [Close]
Close the dialog box.

Specify the Storage Period for Recorded Video

You can specify the storage period for video recorded on the Storage Server.

- Specify a minimum storage period that is within the maximum storage period. For example, if the maximum storage period is 10 days, specify a minimum storage period of 2 days.
- Recorded video is automatically deleted when it exceeds the maximum storage period.
- The Storage Sever monitors available disk space for recording video. When disk space falls below "(Number of cameras + 1) x 64 MB" (threshold level), recorded video will be deleted starting with the oldest video, including video still within the maximum storage period, until enough disk space above the threshold level has been freed (p. 115). When this happens, a "Delete recorded files (when disk space is low)" event occurs.
- Video within the minimum storage period will be deleted if enough disk space above the threshold level cannot be freed, even if all the recorded video that has exceeded the minimum storage period is deleted. When this happens, a "Delete recorded files (when disk space is insufficient)" event occurs, which indicates insufficient disk space for the video recording settings. Changes to the system configuration, such as disk space, or video quality and frame rates for recorded video, are recommended.
- To specify the minimum storage period, select the [Ensure video is kept for at least] check box. Select the units (day or week) of the storage period and enter the number of days or weeks, up to a maximum of 99.
- To specify the maximum storage period, select the [Ensure video is kept for upto] check box. Select the units (day or week) of the storage period and enter the number of days or weeks, up to a maximum of 99.
- Lite Select the units (days or weeks) of the storage period and enter the number of days (1 to 90) or weeks (1 to 12). [Ensure video is kept for upto] is always enabled.

Important

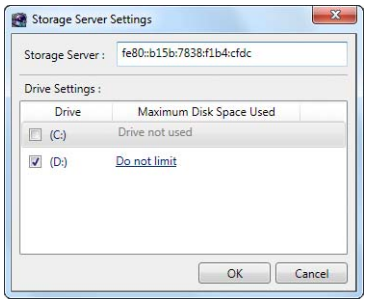
Depending on the maximum disk usage setting for the Storage Server (p. 52), recordings may not be stored for the full storage period specified in this setting.

Change the Destination of the Recording File and the Maximum Disk Usage

Specify a drive for recording or change the maximum disk usage.

1 Select a Storage Server from the list of Storage Servers.

2 Click [Edit] to display the [Storage Server Settings] dialog box.



3 Clear the check boxes next to the drives that are not used for recording.

4 Specify the maximum disk usage.

Click [Do not limit] for each drive to display the maximum disk usage. Select the [Maximum Disk Space Used] check box and specify a maximum disk usage that does not exceed the total disk capacity.

5 Click [OK] to close the dialog box.

Important

- We recommend that you do not specify the system drive (typically the C drive) as the destination for the recording file.
- You cannot specify a drive that has a capacity of less than 1 GB.

Add a Camera

You can add a camera to be used for displaying video or recording to a Storage Server.

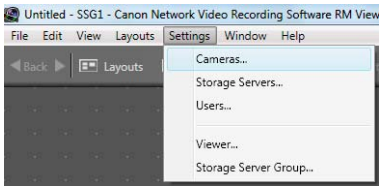
Note

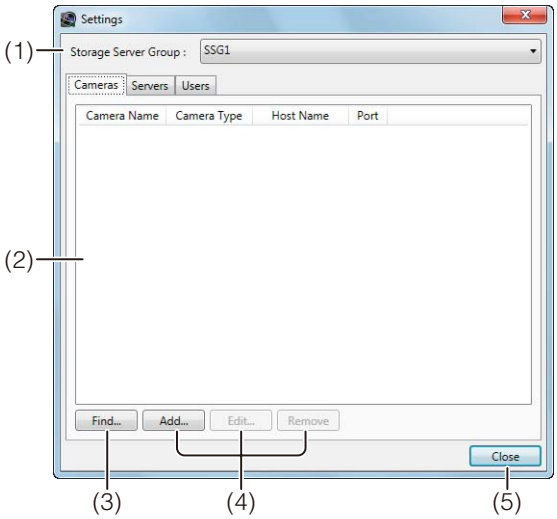
- The number of cameras you can add to a Storage Server depends on the version of this software product.
- Lite You can add up to four cameras.

Display the [Cameras] Tab

Display the [Cameras] tab in the [Settings] dialog box to start adding a camera.

1 Click [Settings] > [Cameras].





(1) [Storage Server Group]
Display the Storage Server Group name.

(2) List of cameras
Displays a list of already added cameras.

(3) [Find]
Search for cameras on the network.

(4) [Add], [Edit], and [Remove]
Add, edit or remove a camera.

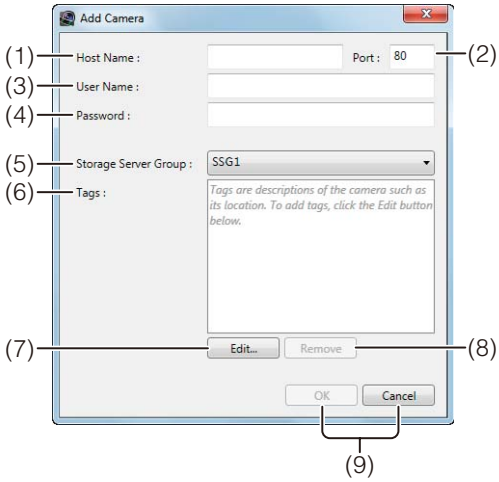
(5) [Close]
Closes the dialog box.

Add Cameras One at a Time

Add cameras one at a time to the list of cameras on the [Cameras] tab.

1 Click [Add] to display the [Add Camera] dialog box.

2 Enter the information required to add the camera.



(1) [Host Name]
Enter the host name or IP address of the camera.

(2) [Port]
Enter the port number for communicating with the camera. Typically, leave [80] unchanged.

(3) [User Name]
Enter the user name for the camera.

(4) [Password]
Enter the password for the user specified in (3).

(5) [Storage Server Group]
Display the Storage Server Group name.

(6) [Tags]
Display the tags assigned to the camera.

(7) [Edit]
Specify a new tag and add it to the list in (6).

(8) [Remove]
Remove tags selected in (6).

(9) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

The camera is added in the list of cameras on the [Cameras] tab.

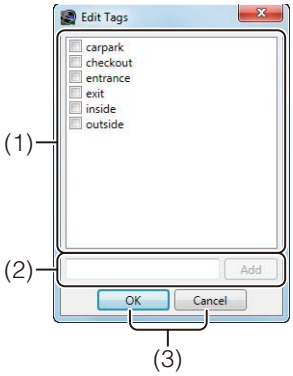
C50F C50i
Video from a camera connected to a multi-terminal VB-EX50 cannot be displayed or recorded by this software.

Important

- Enter the camera's user name and password in [User Name] and [Password].
- If the host name or IP address of the camera is changed after registration, you must also change the Storage Server setting. For details, see "Edit Camera Information" (p. 55).

Assign Camera Tags RM-64/25/9

You can assign keywords, such as the installation location, called camera tags, to the camera.
Click [Edit] in the [Add Camera] dialog box when you are adding the camera to display the [Edit Tags] dialog box.



(1) List of camera tags
Displays a list of assigned camera tags. Select the check box of the tag to assign it to the camera. You can assign more than one camera tag.

(2) Add camera tag area
Add a new camera tag.

[Add]
Enter a tag name in the text box and click this button to add the tag to the list.

(3) [OK] and [Cancel]
Close the dialog box.

■ Using Camera Tags

Camera tags help you organize cameras more easily.

Selectively Displaying Cameras
You can use camera tags to selectively display cameras in the following windows and dialog boxes:

- Camera Selector (p. 65)
- [Recording Schedule] window (p. 79)
- [System Information] window (p. 113)

Specifying a Camera
You can specify a camera using camera tags when doing the following operations:

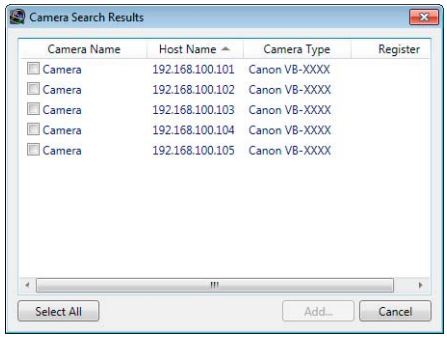
- Specifying a camera with access permissions for user group operation (p. 59)
- Specifying a camera to be automatically displayed in the dynamic layout (p. 73)

Search For and Add Cameras

You can search for cameras that are on the same network as the Storage Server.

1 Click [Find].

The cameras on the subnet are displayed in the [Camera Search Results] dialog box.



2 Select the check box of a camera you want to add. To select all the cameras, click [Select All].

You can add more than one camera by selecting multiple check boxes.

3 Click [Add].

The [Add Camera] dialog boxes for the cameras selected in step 2 are displayed in the order of the [Camera Search Results] list (from top to bottom).

4 Enter the information required to add the camera, referring to step 2 in "Add Cameras One at a Time" (p. 53).

5 Click [OK] to close the dialog box.

6 Repeat steps 4 and 5.

7 When you finish adding cameras click [Cancel].

Note

- You can only search for cameras on the same subnet as the Storage Server. For details on how to add cameras on a different subnet, see “Add Cameras One at a Time” (p. 53).
- The names of the cameras (stored on the camera) are displayed in the list in the [Camera Search Results] dialog box. However, the VB-C300 camera name is not displayed.
- Cameras that have already been added are also found. However, a check box is not displayed next to the camera.
- If you cannot find the camera you are searching for, see “Add Cameras One at a Time” (p. 53) and add the camera.
- Host names or IPv4 addresses are displayed in the [Host Name] column of the [Camera Search Results] dialog box. (IPv6 addresses are not supported.)

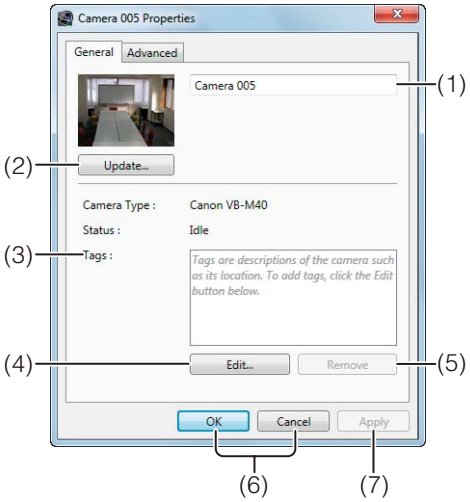
Edit Camera Information

You can edit the camera registration information, such as the camera name or the thumbnail image displayed in the Viewer.

1 Select a camera in the list and click [Edit] in the [Settings] dialog box to display the camera properties.

2 Configure the displayed settings.

[General] tab



(1) Camera name box
Enter a camera name.

(2) [Update]
Update the thumbnail image in the camera selection panel.

(3) [Tags]
Displays the tags assigned to the camera.

(4) [Edit]
Add a new tag to the list in (3).

(5) [Remove]
Remove tags selected in (4).

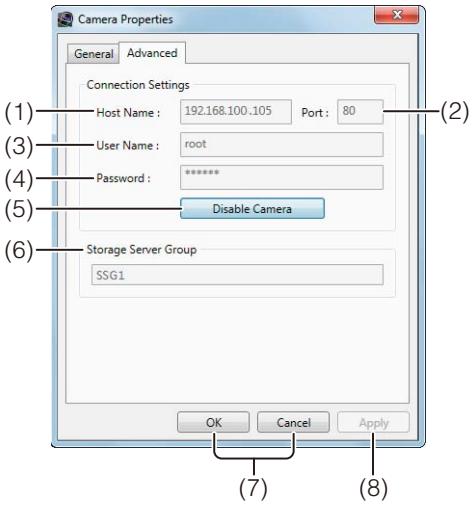
(6) [OK] and [Cancel]
Close the dialog box.

(7) [Apply]
Apply the settings in the dialog box.

Note

The camera name specified in the text box is only used by this software product. The camera name stored on the camera is not changed.

[Advanced] tab



(1) [Host Name]
Change the host name or IP address of the camera.

(2) [Port]
Change the port number used for communicating with the camera. Typically, leave [80] unchanged.

(3) [User Name]
Change the user name of the camera.

(4) [Password]
Change the password for the user entered in (3).

(5) [Disable Camera]
Disables the camera temporarily. To enable the camera, click [Enable Camera].

(6) [Storage Server Group]
Displays the Storage Server Group where the camera is registered.

(7) [OK] and [Cancel]
Close the dialog box.

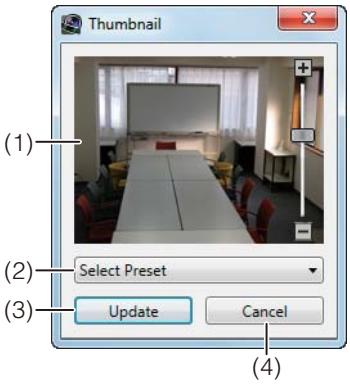
(8) [Apply]
Apply the settings in the dialog box.

Note

- Items (1) to (4) can only be changed if the camera is disabled using [Disable Camera].
- If a camera is not working, you can disable it to prevent communication error notifications from being sent repeatedly.
- If you replace a camera that is not working with another camera, change the new camera's host name, etc. to that of the non-working camera so there will be no effect on existing recording schedules and settings. (The replacement should be the same model as the original camera.)

■ Change the Thumbnail Image of a Camera

You can change the thumbnail image of a camera.
In the camera properties dialog box, click the [General] tab and click [Update] to display the [Thumbnail] dialog box.



(1) Preview video
Drag the slider to change the zoom position of the camera. Click in the preview video to change the camera position.

(2) [Select Preset]
Select a preset made with the camera.

(3) [Update]
Use the current preview video as the camera thumbnail image. The [Thumbnail] dialog box closes and the camera thumbnail image is updated.

(4) [Cancel]
Close the dialog box without updating the thumbnail image.

Note

- You must configure the presets first before starting operation. For details, see the camera manual.
- The pan/tilt/zoom operation and preset selection may be disabled, depending on the camera in use.

Remove a Camera

1 Select a camera in the list of cameras on the [Cameras] tab.

2 Click [Remove].

3 A message is displayed asking if you want to remove the camera. Click [Yes].

Important

If you remove a camera, you will no longer be able to play back recordings made with the camera. If you need to play back the recordings, use [Disable Camera] on the [Advanced] tab instead of removing the camera.

Add a User

You can add users to the Viewer and place them in the administrator group or the general user group.

About User Groups

The Viewer provides the following two user groups, each with different user permissions.

- Administrator
  Users in this group can fully operate the Viewer.
- Operator
  Users in this group have limited access to the features of the Viewer. They cannot configure a camera or set a recording schedule.

You can specify the group to which the added user belongs by selecting from [User Group].
You can create a new user group and specify permissions for users that belong to the group.

Important

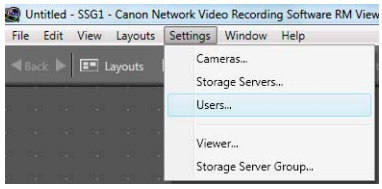
- A default user called “administrator” is created in the Administrator user group. The password for this user is “NVR”. We recommend that you change the password for this user after installation. We strongly recommend that, for normal surveillance operation, you create individual users with access permissions for only the minimum required functionality.
- Be sure to remember your password.
- Lite You cannot add user groups.

Note

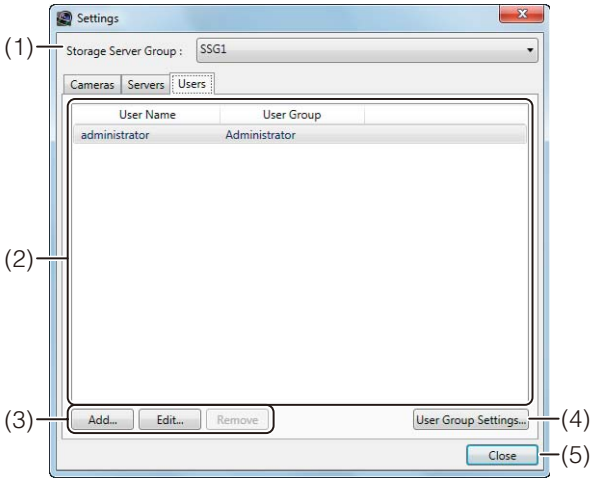
Administrator for this software program does not refer to the Windows administrator.

Display the [Users] Tab

1 Click [Settings] > [Users].



The [Users] tab is displayed in the [Settings] dialog box.



(1) [Storage Server Group]
Display the Storage Server Group name.

(2) List of users
Displays a list of existing users.

(3) [Add], [Edit], and [Remove]
Add, edit or remove a user.

(4) [User Group Settings]
Add, edit or delete a user group.

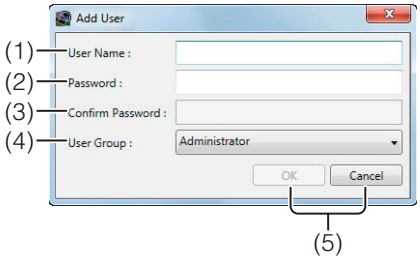
(5) [Close]
Closes the dialog box.

Add a User

Use this tab to add a new Viewer user. Also use it to specify the kind of user (Administrator or Operator).

1 Click [Add] to display the [Add User] dialog box.

2 Enter the information required to add the user.



(1) [User Name]
Enter the name of the user to be added.

(2) [Password]
Enter the password used to log into the Viewer.

(3) [Confirm Password]
Enter the password again for confirmation.

(4) [User Group]
Select the user group ("Administrator" or "Operator"). You can also select an added user group. For details, see "Add a User Group and Specify Its Access Permissions" (p. 59).

(5) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

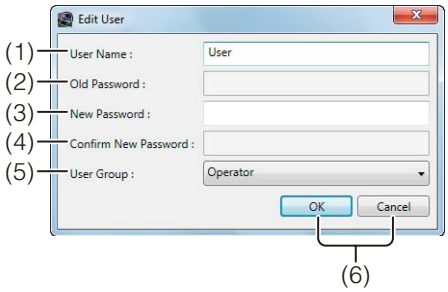
The added user appears in the list of users on the [Users] tab.

Change the User Information

1 Select a user in the list.

2 Click [Edit] to display the [Edit User] dialog box.

3 Change the user information.



(1) [User Name]
All user names can be changed, except for the default "administrator" user name.

(2) [Old Password]
Enter the old password.

(3) [New Password]
Enter the new password.

(4) [Confirm New Password]
Enter the new password again for confirmation.

(5) [User Group]
Select a user group ("Administrator" or "Operator"). You can also select an added user group (p. 59). The default "administrator" user is associated with the Administrator user group. You cannot change this user group for the default "administrator" user.

(6) [OK] and [Cancel]
Close the dialog box.

4 Click [OK] to close the dialog box.

Remove a User

1 Select a user in the list.

2 Click [Remove].

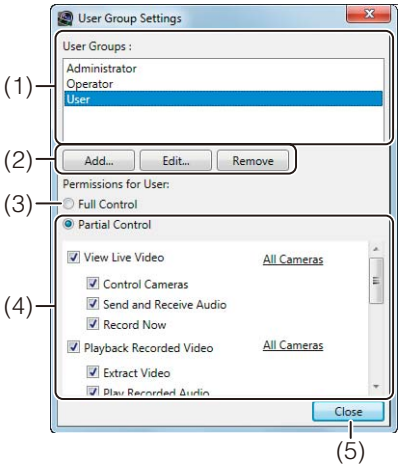
3 A message asking if you want to remove the user is displayed. Click [Yes].

Note

You cannot delete the default “administrator” user.

Add a User Group and Specify Its Access Permissions RM-64/25/9

You can create additional user groups and specify access permissions for the group.
In the [Settings] dialog box, click the [User] tab and click [User Group Settings] to display the [User Group Settings] dialog box.



(1) List of user groups
Displays a list of existing user groups.

(2) [Add], [Edit], and [Remove]
Add, edit or remove a user group.

(3) [Full Control]
Assign all access permissions for the selected user group.

(4) [Partial Control]
Specify individual access permissions for the selected user group.

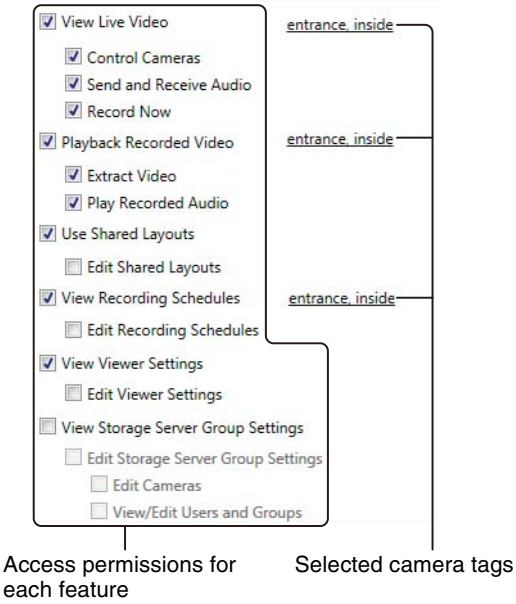
(5) [Close]
Close the dialog box.

Note

You cannot edit or remove the “Administrator” and “Operator” user groups.

■ Specify Individual Access Permissions

Click [Partial Control] and select the check boxes next to the desired access permissions for each feature.



Select the check box next to a feature to enable operation of the feature.
Camera tags are only displayed for [View Live Video], [Playback Recorded Video], and [View Recording Schedules]. Click a tag to display a dialog box for specifying camera tags to narrow down the cameras to which the access permissions will be assigned.

Chapter 4

Viewer Settings

❏ Configuring the Viewer
❏ Configuring a camera
❏ Creating a layout

Flow for Viewer Settings

Start the Viewer (p. 45)

↓

Configure the Viewer

Display the [Viewer Settings] dialog box (p. 63)

↓

Configure the Viewer display and operation settings (p. 63)

Configure the display/hide mode for each event (p. 64)

Configure event notification and priorities (p. 64)

↓

Configure the camera

Display the [Camera Selector] dialog box (p. 65)

↓

Select a camera (p. 65)

Configure the [Advanced Camera Settings] (p. 68)

Configure the video window (p. 66)

↓

Configure the video window layout

Create a layout (p. 71)

↓

Place a video window (p. 72)

↓

Save the layout (p. 73)

↓

Configure a dynamic layout (p. 73)

↓

Configure a layout sequence (p. 74)

Important

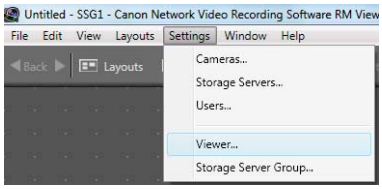
We strongly recommend that only one administrator configure the Storage Servers on each network.

Configure the Viewer

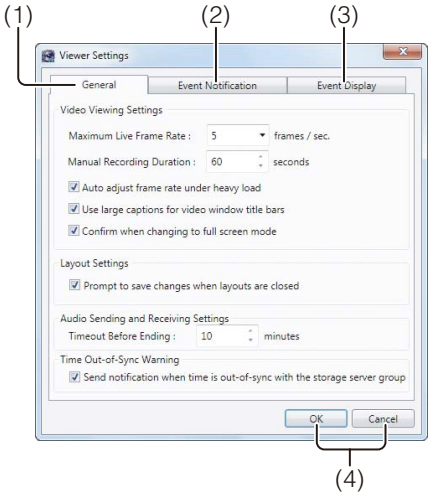
Start the Viewer and configure it for day-to-day operations. For details on how to start the Viewer, see “Start the Viewer” (p. 45).

Display the [Viewer Settings] dialog box

1 Click [Settings] > [Viewer].



The [Viewer Settings] dialog box is displayed.



(1) [General] tab
Configure the Viewer screen display settings.

(2) [Event Notification] tab
Configure how the Viewer displays an event.

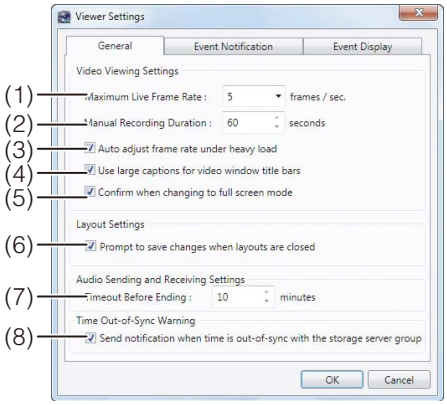
(3) [Event Display] tab
Specify the types of events to be displayed in the Viewer.

(4) [OK] and [Cancel]
Close the dialog box.

Configure the Viewer Display and Operation Settings

1 Click the [General] tab.

2 Configure each item.



(1) [Maximum Live Frame Rate]
Specify the maximum live view frame rate.

(2) [Manual Recording Duration]
Specify the [Record Now] recording time, from 30 to 300 seconds.

(3) [Auto adjust frame rate under heavy load]
Automatically adjust the display frame rate.

(4) [Use large captions for video window title bars]
Increase the title bar text size of the video window.

(5) [Confirm when changing to full screen mode]
Display a confirmation message when switching to full screen mode.

(6) [Prompt to save changes when layouts are closed]
Display a confirmation message when a layout in the Viewer is closed. The message is not displayed if the layout is not changed.

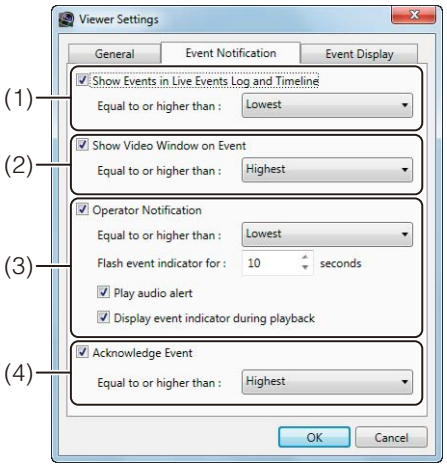
(7) [Timeout Before Ending]
Automatically stop two-way audio communication after the specified period, from 1 to 60 minutes. You can also specify 0 minutes. However, two-way audio communication will not stop automatically in such cases, so you must stop it manually. We recommend setting an arbitrary timeout duration to avoid unintentional continuation of audio communication.

(8) [Send notification when time is out-of-sync with the storage server group]
Display a message if there is a time difference of 5 seconds or longer between the Storage Server and the Viewer computer when connected to a Storage Server Group.

Configure Event Notification and Priorities

1 Click the [Event Notification] tab.

2 Configure each item.



(1) [Show Events in Live Events Log and Timeline]
Display an event in the [Live Events Log] dialog box and on the timeline.

[Equal to or higher than]
Specify the priority of events to be displayed.

(2) [Show Video Window on Event]
Automatically display the camera's video window when an event occurs.

[Equal to or higher than]
Specify the priority of events for which a video window is displayed.

(3) [Operator Notification]
Notify the operator that an event occurred.

[Equal to or higher than]
Specify the priority of events to be notified.

[Flash event indicator for]
Specify the time the event indicator flashes right after the event occurs, from 1 to 99 seconds.

[Play audio alert]
Beep when an event occurs.

[Display event indicator during playback]
Display an event during playback.

(4) [Acknowledge Event]
Prompt the operator to acknowledge an event.

[Equal to or higher than]
Specify the priority of events to be acknowledged.

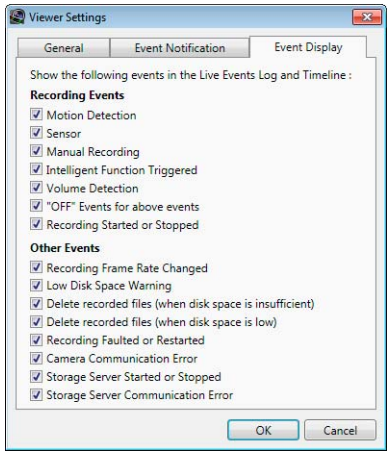
Lite You cannot change the [Show Video Window on Event], [Operator Notification], and [Acknowledge Event] settings.

Configure the Display/Hide Mode for Each Event RM-64/25/9

Specify the types of events displayed in the [Live Events Log] dialog box and on the timeline.

1 Click the [Event Display] tab.

2 Specify whether or not to display each type of event.



Select an event to be displayed in the [Live Events Log] dialog box and on the timeline.

Configure the Camera

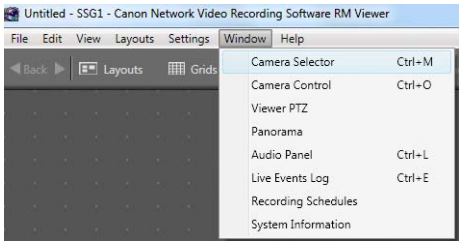
Select the cameras to use, using this software, and make settings related to the individual cameras.

Important

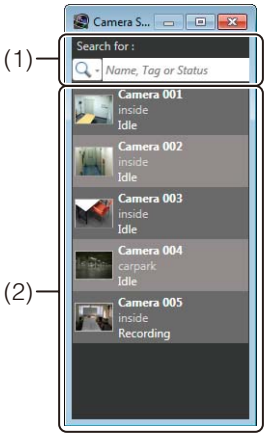
The configuration items and values that are available will vary depending on the camera and settings used for recording. For details, refer to the camera manual.

Display the [Camera Selector] dialog box

1 Click [Window] > [Camera Selector].



The [Camera Selector] dialog box is displayed.



(1) [Search for] box
Search for the camera to be used for display.

(2) Camera list
Displays a list of registered cameras.

Note

Each time you select [Window] > [Camera Selector], the display of the [Camera Selector] dialog box is toggled on or off.

Select a Camera

When you have a large number of cameras registered, search for the camera using the camera name or any associated tags.

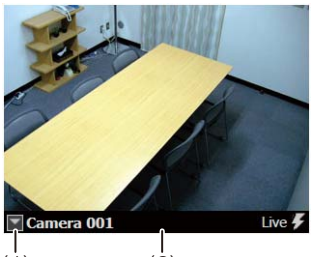
1 Click the search button and specify the search criteria.

The following items are displayed when you click the search button.

- [Name, Tag or Status]
  Enter a camera name, tag or camera status in the search criteria box.
- [Camera Name]
  Enter the camera name in the search criteria box.
- [Tag]
  Select the camera tag to be searched.
- [Camera Status]
  Select the camera status to be searched.
- [Camera Type]
  Select the model name to be searched.
- [Host Name (camera)]
  Enter the camera host name or IP address in the search criteria box.
- [Storage Server Group Name]
  Searching by this item is not available.

2 Specify the search criteria and search for the camera.

3 Double-click the camera in the search results to display the video window.



(1) (2)

(1) Video window menu button
Click to display a menu for operating the video window.

(2) Title bar
Displays the camera name and type of video being displayed.

4 To display video from other cameras, repeat step 3.

Important

- When an error occurs, the corresponding error message is displayed in the video window. For details, see “Error Messages in the Video Window” (p. 125).
- The number of video windows that can be displayed in the Viewer depends on factors such as the graphics card, CPU performance, frame rate, camera video size, and the video quality.
- Viewer operation may slow down under high CPU loads.

Note

Depending on the on-screen display function of the camera, you may need to change the display position if displayed text is concealed by the title bar or other objects.

Configure the Video Window

You can configure the video window settings, including the window size and the video format (JPEG or MPEG-4).

■ Change the Video Window Size

1 Click the video window menu button to display the menu.

2 Click [Video Display Size] and select the video window size from the submenu.

- [160x120] / [320x240] / [640x480]
  Change the size of the video window, selecting from small ([160x120]), medium ([320x240]) and large ([640x480]).
- [Default]
  Adjusts the size of the video window to the received video size. For the video size during reception, see “Change the Video Window Resolution” (p. 67).
- [Full Screen]
  Display a video on the entire screen. For details, see “Display the video Full Screen” (p. 67).

Note

- Drag any corner of the video window to resize it.
- If the video window size selected in the [Video Receive Size] submenu is greater than [640 x 480], the load on the CPU will increase and the Viewer may operate more slowly.
- Depending on the grid (p. 72) type that is selected, some of the [Video Display Size] submenus are grayed out and cannot be selected.

Grid type	Sizes that cannot be selected in [Video Display Size]
[None]	None (any selection is available)
[Alignment]	None (any selection is available)
[160x120]	[Default]
[320x240]	[160x120], [Default]
[640x480]	[160x120], [320x240], [Default]
[Custom]	[160x120], [320x240], [640x480], [Default]

- If the video receive size and video display size have a different aspect ratio, black bands may be displayed along the left/right edges or top/bottom edges of the video.

■ Change the Video Window Format

1 Click the video window menu button to display the menu.

2 Click [Video Format] and select the video format ([JPEG] or [MPEG-4], or [H.264]) from the submenu.

Important

Live video and audio are not synchronized for [MPEG-4] and [H.264].

■ Change the Video Window Resolution

1 Click the video window menu button to display the menu.

2 Click [Video Receive Size] and select the resolution from the submenu.

[160x120], [320x240], [480x270], [640x480], [960x540], [1280x960], [1920x1080] and [Default] are available. Select [Default] to use the camera's resolution.

Important

- When you display more than one video window for the same camera, changes to the resolution of one of these windows are applied to all of the other windows.
- The three video receive sizes in each set, for example [480x270 (320x180 / 320x240)], in the [Video Receive Size] submenu are sizes that correspond to the category [1080p category (720p category / 4:3 category)], respectively. Which of the three sizes that is used is determined by the size set in [Video Size Set] for the camera.
- H41 H610 H710
  The video size is set to "480x270" when [480x270 (320x180 / 320x240)] is selected in [Video Receive Size]. To set to "320x240," select [320x240].

Note

- If you save the layout (p. 73), the [Video Receive Size] setting is also saved.
- The size used for [Default] is determined the first time you display a video from the camera. The size on the Viewer will not change, even if you change the size setting on the camera.

■ Display the video Full Screen

You can display the video full screen.

1 Click the video window menu button to display the menu.

A white frame is displayed surrounding the selected video window.

2 Click [Video Display Size] and select [Full Screen] from the submenu.

3 A confirmation message is displayed. Click [Yes].

The video from the selected video window is displayed full screen.

4 To exit full screen display, press the Esc key.

Configure the [Advanced Camera Settings]

1 Click [Window] > [Camera Control].

2 Click the video window of the camera you want to configure and click [Control] on the [Camera Control] dialog box to get control of the camera.

3 Click [Advanced] on the [Camera Control] dialog box to display the [Advanced Camera Settings] dialog box.

4 Click the tab that you want to configure.

5 After configuring the settings, click [Close].

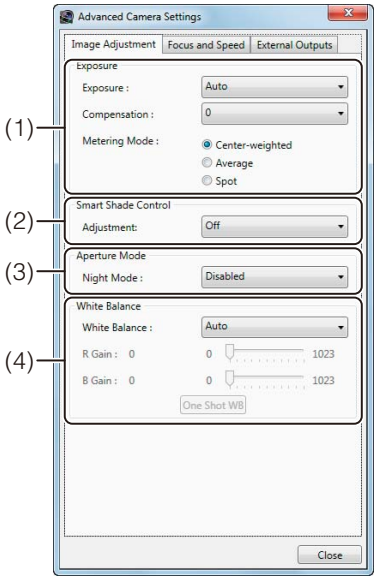
Important

- If camera control is lost while the [Advanced Camera Settings] dialog box is open, you cannot continue configuring the settings. Click [Control] on the [Camera Control] dialog box again to get control and continue configuring the settings. For details on camera control privileges, see “Get Control of a Camera” (p. 105).
- [Advanced Camera Settings] is only available while recording a video when you have camera control privileges. If camera control is lost, settings will return to the recording schedule settings.
- If intelligent function detection settings are enabled when the camera position is fixed, the software cannot obtain camera control privileges in order to configure advanced camera settings. In this case, configure the camera on the setting page of the camera.

■ Adjust the Video Quality

Adjust the video quality using the [Image Adjustment] tab in the [Advanced Camera Settings] dialog box.

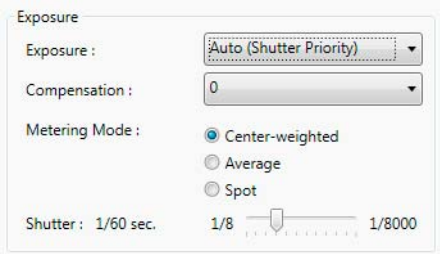
[Image Adjustment] tab



(1) [Exposure]
The settings change according to the selected exposure setting.

- [Auto]
  Automatically control the exposure.
- [Auto (Flickerless)]
  Reduce flicker from light sources, such as fluorescent lighting. The shutter speed is automatically adjusted according to the lighting conditions.
- [Auto (Shutter Priority)]
  Specify the shutter speed.

The following exposure compensation setting is displayed when [Auto], [Auto (Flickerless)], or [Auto (Shutter Priority)] is selected.



[Compensation]: Specify exposure compensation. Select negative values to darken the video and positive values to lighten the video.

[Metering Mode]: Specify the metering mode setting: [Center-weighted], [Average], or [Spot].

Metering mode	Description
[Center-weighted]	Meters the entire scene, with an emphasis on the center. Correct exposure is obtained for a subject near the center of the scene, even though the periphery may be slightly darker or lighter. Use for subjects that are in the center of the scene.
[Average]	Meters an average of the entire scene. A uniform exposure is obtained even when the scene has significant differences in brightness. Use for scenes where, for example, cars are passing through or people are entering and exiting.
[Spot]	Meters the center of the scene. The correct exposure is obtained for a subject near the center of the scene, irrespective of the brightness of the periphery. Use if the subject is lit by a spotlight or is backlit, where the exposure should be adjusted to the center of the scene.

[Shutter]: Specify the shutter speed when [Exposure] is set to [Auto (Shutter Priority)].

- [Manual]
  Compensate for the exposure manually. The following exposure compensation settings are displayed.

[Iris]: Specify the iris setting. Drag the slider to the left to close down the iris and make the video darker or to the right to open up the iris and make the video brighter.
[Shutter]: Specify the shutter speed.
[Gain]: Specify the gain (sensitivity to brightness). Drag the slider to the left to decrease the gain and make the video darker or to the right to increase the gain and make the video brighter.

Note

The [Auto (Flickerless 2)] setting is not supported.

(2) [Smart Shade Control]
Specify a value to use for the camera's smart shade control feature for live video.
[Off]: Display live video using smart shade control value configured on the camera.
[Auto]: Set smart shade control to automatic.
[1] to [7]: Select one of seven strength levels when setting the smart shade control function manually.

(3) [Aperture Mode]
Specify the camera aperture mode.

[Night Mode]

- [Disabled]
  Disable the night mode function.
- [Enabled]
  Display live video in night mode.
- [Auto]
  The camera automatically switches to night mode.

(4) [White Balance]
Specify the appropriate white balance by selecting one of the camera's light source settings displayed in the list.
If [Manual] is selected, use one of the following two methods to adjust the white balance.

- [R Gain] and [B Gain]
  Specify the white balance parameters by dragging the sliders. Drag to the right to increase the gain (the sensitivity to brightness).
- [One Shot WB]
  Force white balance adjustment to a light source. Using a white object (such as piece of white paper) as a standard, fill the shot with the object and click this button.

Important

If you select [Enabled] for Night Mode, you will not be able to set the white balance. If you select [Auto] for Night Mode, however, you will be able to set the white balance, but those settings will be cleared when the camera switches to Night Mode.

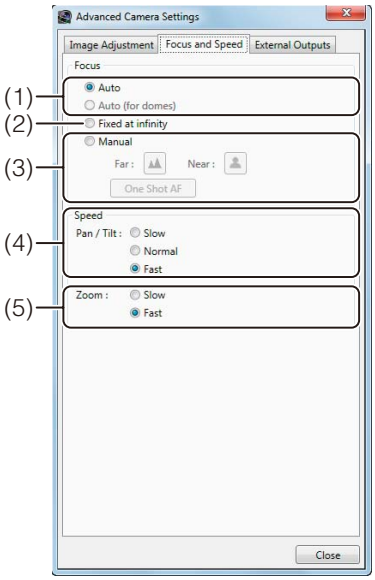
Note

When [Night Mode] is enabled in [Aperture Mode], both the displayed and recorded video is in black and white.

■ Adjust the Focus and Speed

You can use the [Focus and Speed] tab in the [Advanced Camera Settings] dialog box to adjust the focus and the pan/tilt/zoom speeds.

[Focus and Speed] tab



(1) [Auto], [Auto (for domes)]
Automatically focus the video.
Use [Auto (for domes)] for cameras equipped with an indoor dome housing. The setting prevents the camera from focusing onto the dome surface.

(2) [Fixed at infinity]
Fix the focal point at infinity.

(3) [Manual]
Adjust the focus manually by clicking the [Far] or [Near] button.
Click [One Shot AF] to focus once on the current subject and then return to manual focus.

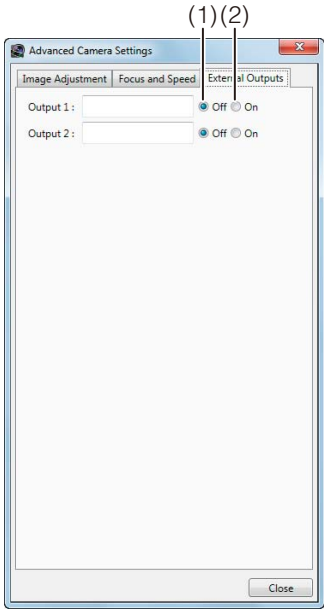
(4) [Pan/Tilt]
Specify the pan/tilt speed ([Slow], [Normal] or [Fast]).

(5) [Zoom]
Specify the zoom speed ([Slow] or [Fast]).

C500
When the digital zoom on the camera is set to [Disable], the zoom speed is unavailable.

■ Configure External Outputs

Use the [External Outputs] tab on the [Advanced Camera Settings] dialog box to configure output to external devices connected to the camera.



(1) [Off]
Disable the external output.

(2) [On]
Enable the external output.

Configure the Video Window Layout

You can save the size and position of a video window in the Viewer as a layout.
Configure a layout using the following procedure:

1. Create a layout
2. Place a video window
3. Save the layout

The following special layouts are also provided:

- Dynamic layouts RM-64/25/9
  Specify criteria, such as camera tags and events, to only display video windows that meet the criteria. You can also select a pre-defined dynamic layout.
- Layout Sequences RM-64/25/9
  Sequence through multiple layouts you have created at a certain time interval.

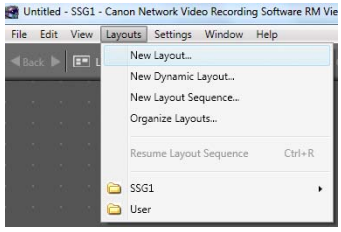
Note

When the Viewer starts, it displays the layout that was being displayed when the program last ended. A new layout with the name “Untitled” is opened the first time the Viewer is started. You can save the layout with a name after you place a video window.

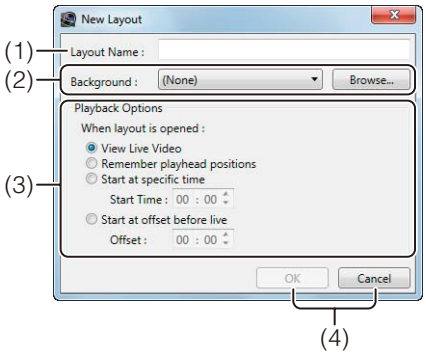
Create a Layout

Specify the layout name, layout background and the video window display conditions and open it as a new layout.

1 Click [Layouts] > [New Layout] to display the [New Layout] dialog box.



2 Configure each item.



(1) [Layout Name]
Enter the name of the layout.

(2) [Background]
Specify the background of the layout. Click [Browse] to specify an image (a .bmp file or JPEG file) to be used for the background.

(3) [Playback Options]
Specify how the video windows are displayed when the layout is opened.

- [View Live Video]
  Display the live view from the camera.
- [Remember playhead positions]
  Play back recordings starting from the positions that were playing when the program last ended.
- [Start at specific time]
  Play back a recording starting at a specific time.
- [Start at offset before live]
  Start playback from a position a specific amount of time in the past.

(4) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

Lite [Background] and [Playback Options] are unavailable.

Important

Following the above steps does not automatically save the layout. Be sure to enter a name and save the new layout after configuring it.

Place a Video Window

You can place a video window anywhere in the viewing area.
You can arrange video windows according to a grid.

■ Change the Layout Background Image RM-64/25/9

You can select an image for the layout background.

1 Click [Layouts] > [Organize Layouts] to display the [Organize Layouts and Layout Sequences] dialog box.

2 Click the layout for which you want to specify a background, and click [Properties] to display the properties of the layout.

3 Click [Browse] for [Background].

4 Specify the image file to use as the background, and click [Open].

Note

- The image that you specify as the background will be registered to the [Background] list in the layout properties.
- To disable backgrounds, select [(None)] in the [Background] list of the layout properties.

■ Display a Grid

You can display a grid consisting of dots or solid lines in the viewing area of the Viewer. The video window has a neat and tidy appearance because it is displayed according to the grid. When a solid grid is displayed, the size of the video window can be adjusted to the grid.

1 Click [Grids] on the toolbar.

2 Select the type of grid.

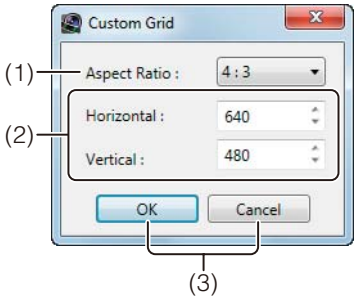
- [None]
  Do not display a grid. You can put the video window where you like.
- [Alignment]
  Display a dotted grid. You can put the video window adjusted to the position of the dots.
- [160x120] / [320x240] / [640x480]
  Display a solid grid with the specified size.
- [Custom]
  Displays the [Custom Grid] dialog box.

Note

If the video receive size and video display size have a different aspect ratio, black bands may be displayed along the left/right edges or top/bottom edges of the video. To set a video window with 16:9 aspect ratio, set a custom grid where [16:9] is specified for [Aspect Ratio].

Configure a Custom Grid RM-64/25/9

Selecting [Custom] as a grid type displays the [Custom Grid] dialog box, where you can configure the size of the grid.



(1) [Aspect Ratio]
Specify the aspect ratio of the grid frame ([4:3] or [16:9]).

(2) [Horizontal] and [Vertical]
Specify the number of horizontal and vertical pixels in the grid frame.
Changing the value for one of the items changes the value in the other box to maintain a constant aspect ratio.

(3) [OK] and [Cancel]
Close the dialog box.

Note

Using a custom grid may increase the load on the CPU.

■ Move a Video Window

You can drag a video window to any position.
When the grid is set to [None], the video window remains in the position to which it is dragged.
For options other than [None], the video window snaps to the grid position that is nearest to where the window is dragged.

Important

The number of video windows that can be displayed in the Viewer depends on factors such as the video card, CPU performance, video frame rate, camera video size, and the video quality.

Note

- When a setting other than [None] is selected for grid, the video window is automatically adjusted to the grid. When a grid has just been set it retains its original size, but when the video window is dragged, window size is adjusted to the grid.
- You can enlarge the video window in multiples of the grid frame size (2 x 2, 3 x 3, etc.).

Save the Layout

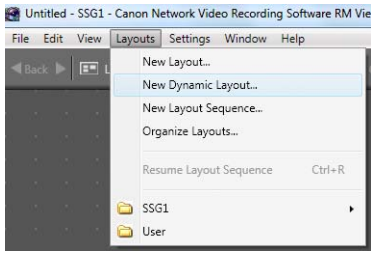
After configuring the display and position of the video windows, follow these steps to save the layout.

1 Click [File] > [Save Layout].

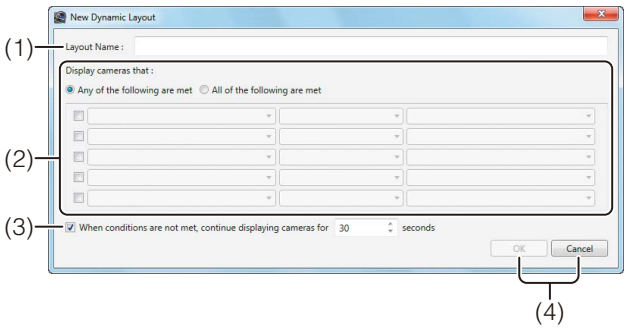
2 Change the layout name as required, and click [OK].

Configure a Dynamic Layout RM-64/25/9

1 Click [Layouts] > [New Dynamic Layout] to display the [New Dynamic Layout] dialog box.

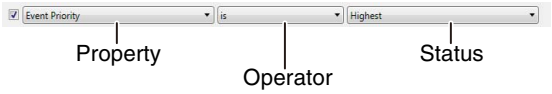


2 Specify the criteria for the video windows displayed in the dynamic layout.



(1) [Layout Name]
Enter the name of the dynamic layout.

(2) [Display cameras that]
Specify the display criteria for cameras.
Click a check box to make a set of display criteria available, and then click each criteria list to select the criteria.
You can specify up to five sets of criteria.
The criteria are (from left to right), the property, operator, and status.



Property	Operator for the decision	Status
Tags	is isn't	Camera tags
Status	is isn't	Camera status (such as [Recording], [Idle], or [Error])
Event Type	is isn't	Event type (such as [Motion] or [Sensor])
Event Priority	is is equal or higher than is equal or lower than	Event priority ([Highest], [High], [Medium], [Low], or [Lowest])

Property	Operator for the decision	Status
Storage Server Group	is isn't	The name of Storage Server Group to which the Viewer is connected.

Select [All of the following are met] to display only cameras that meet all the criteria. Select [Any of the following are met] to display cameras that meet any of the criteria.

(3) [When conditions are not met, continue displaying cameras for]
Specify how long a video window in the layout will remain displayed when it does not match the criteria specified here.

(4) [OK] and [Cancel]
Close the dialog box.

3 Click [OK] to close the dialog box.

4 Click [File] > [Save Layout].

5 Change the layout name as required and click [OK].

Note

The maximum number of dynamic layout video windows that can be displayed is 25.

Switch Between Layouts

1 Click [Layouts] on the toolbar to display a menu for selecting existing layouts.

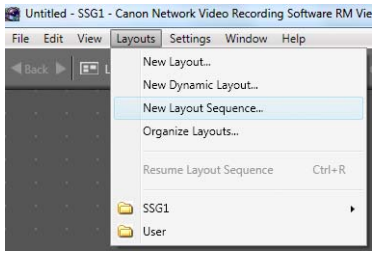
2 Select a layout.

The menu is separated into two sub-menus:

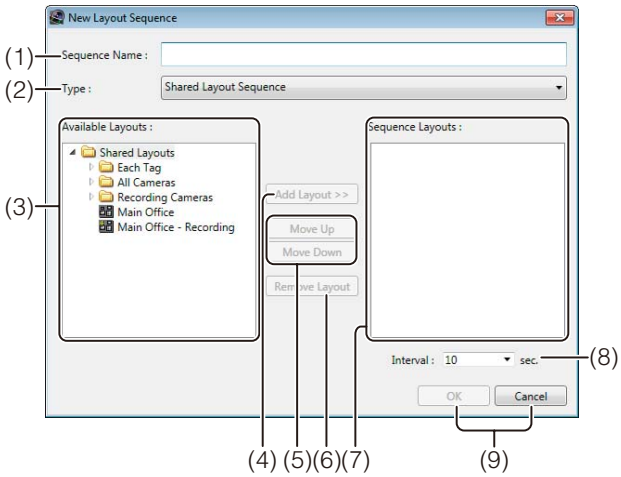
- Shared layouts
  Displays shared layouts under the name of the Storage Server Group. The [Layouts] menu shows the Storage Server Groups.
  All users have access to the layouts, however, only the administrator can make changes to them.
- User layouts
  Displays layouts created by the currently logged in user. These layouts are not available to other users.

Configure a Layout Sequence RM-64/25/9

1 Click [Layouts] > [New Layout Sequence] to display the [New Layout Sequence] dialog box.



2 Specify the layouts to be displayed in the sequence.



(1) [Sequence Name]
Enter the name of layout sequence.

(2) [Type]
Specify the type of layout sequence.

(3) [Available Layouts]
Displays a list of available layouts.

(4) [Add Layout]
Add the selected layout to the [Sequence Layouts] list.

(5) [Move Up] and [Move Down]
Move the selected layout up or down in the list to change the sequence order.

(6) [Remove Layout]
Remove a layout from the list.

(7) [Sequence Layouts]
Displays a list of layouts in the order of the layout sequence.

(8) [Interval]
Specify the display time of each layout in the sequence, from 5 to 9999 seconds.

(9) [OK] and [Cancel]
Close the dialog box.

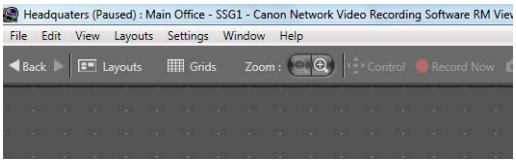
3 Click [OK] to close the dialog box.

■ Resume Layout Sequence

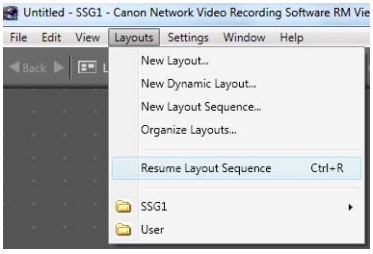
In the following situations, the layout sequence automatically stops.

- When you click the layout area
- When you obtain camera control privileges
- When you click [Grids] on the toolbar and select a grid type from the displayed menu
- When you open a menu on the menu bar
- When you switch to another tab or open a new tab
- When a layout property is canceled, e.g., because it was deleted by a viewer on another computer

When stopped, “Paused” appears in the title bar as shown below.



To resume a stopped layout sequence, click [Layouts] menu > [Resume Layout Sequence].
During full screen display, right-click anywhere in the viewing area, outside the video windows, and click [Resume Layout Sequence], or press Ctrl+R to resume the sequence.

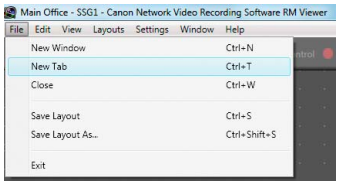


Open Multiple Layouts Using Tabs

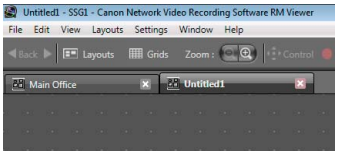
RM-64/25/9

You can open different layouts using tabs for quick access.

1 Click [File] > [New Tab] to open a new tab.



A new layout is displayed for the tab.

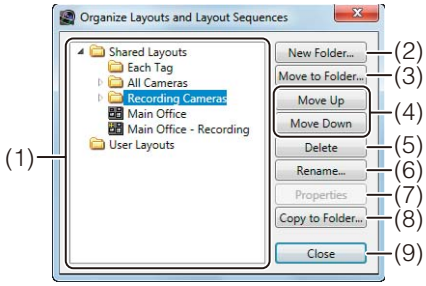


2 Select a layout and open it in the tab (p. 74).

Organize Layouts

You can change the display order of menus, classify and organize layouts in folders, and edit the layouts.

1 Click [Layouts] > [Organize Layouts] to display the [Organize Layouts and Layout Sequences] dialog box.



(1) Layout tree
Displays a list of created layouts.
The layout tree uses the following icons:

Icon	Description
	Custom layout
	Dynamic layout
	Layout sequence
	Folder

(2) [New Folder]
Create a new folder.

(3) [Move to Folder]
Move the selected layout to a folder.

(4) [Move Up] and [Move Down]
Move the selected layout up or down in the list.

(5) [Delete]
Delete the selected layout from the list.

(6) [Rename]
Change the name of the selected layout.

(7) [Properties]
Displays the properties of the selected layout.
The properties displayed will differ according to the type of layout, as described below.

(Normal) Layout: Same as the properties displayed in step 2 on p. 71. You can configure the background and the video window display.

Dynamic Layout: Same as the properties displayed in step 2 on p. 73. You can specify the conditions for displaying cameras.

Layout Sequence: Same as the properties displayed in step 2 on p. 74. You can specify the layouts that will be automatically sequenced.

(8) [Copy to Folder]
Copy the selected layout to a folder.

(9) [Close]
Close the dialog box.

Important

- You cannot change the name of the [Shared Layouts] and [User Layouts] folders.
- Only the administrator (or a user with the required permissions) can manage shared folders (p. 57).

Note

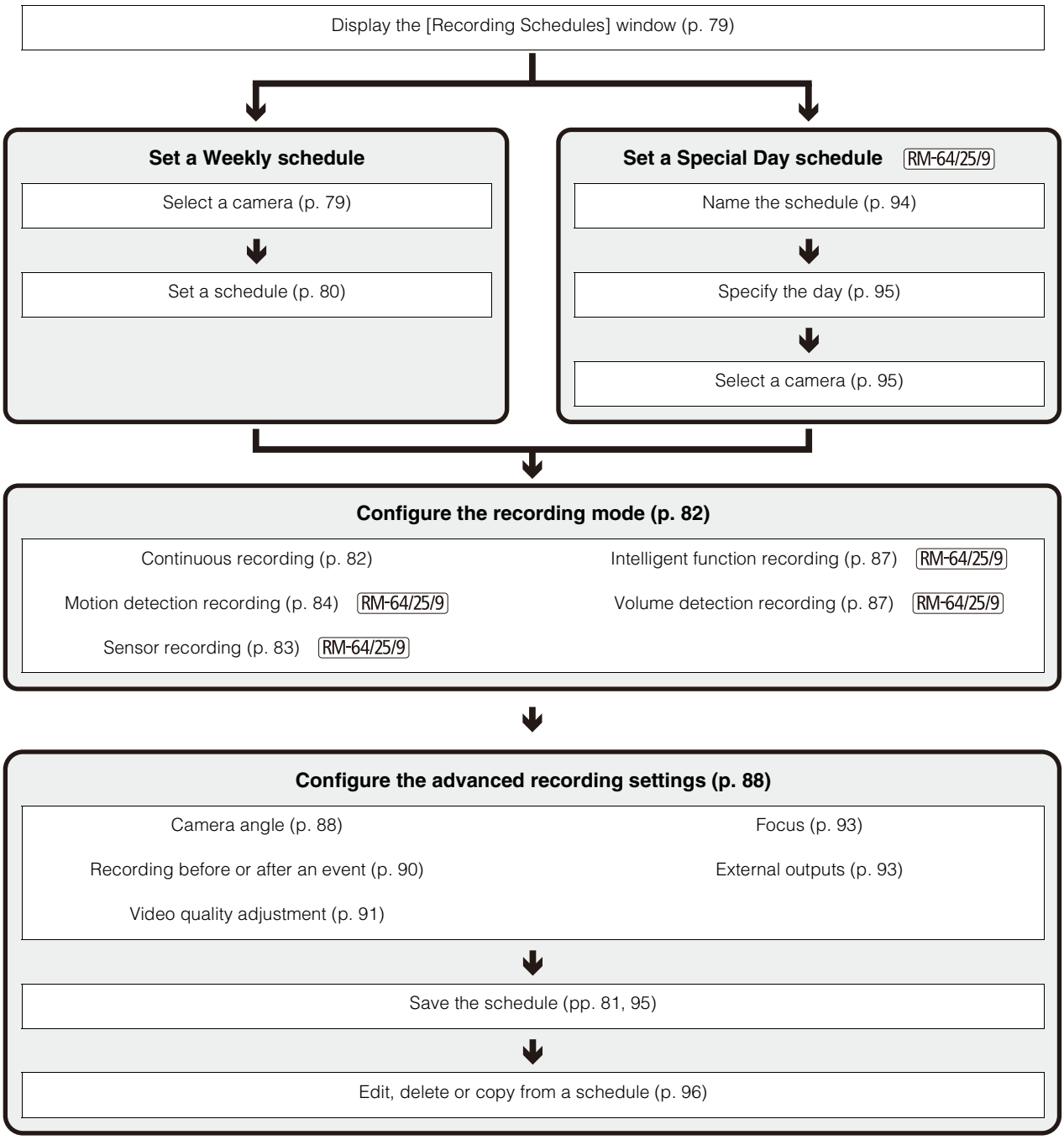
The settings in the [Organize Layouts and Layout Sequences] dialog box, such as the order of the layout sequence and the folder types are also displayed when you click the [Layout] menu, or when you click the [Layouts] button on the toolbar.

Chapter 5

Setting a Recording Schedule

- ❏ Setting weekly schedules
- ❏ Configuring recording modes: continuous recording, motion detection recording, and sensor recording
- ❏ Setting special day schedules

Flow of Recording Schedule Settings



C50F C50i

The camera supports sensor recording and schedule recording to internal memory (picture recording function). If these features are enabled, they take precedence over the Storage Server recording schedule. You must disable the feature on the camera before using the recording schedule on the Storage Server.

C50F C50i

If [Restrict Service Time] is enabled on the camera, recording will take place only during the service time, irrespective of the recording schedule.

Important

Be sure to test recording schedules before using them.

Record on a Regular Basis (Repeating Weekly Schedules)

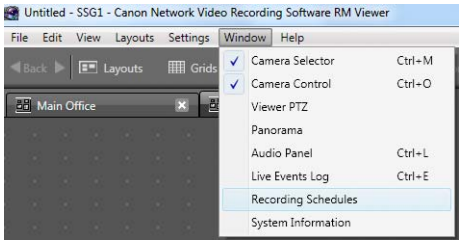
You can configure a recording schedule for each day of the week.

Important

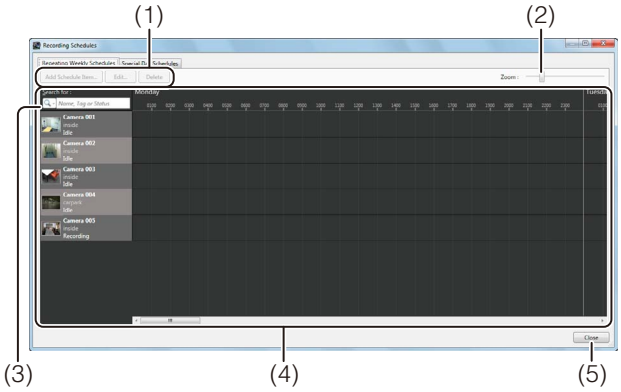
The configuration items and values that are available will vary depending on the camera and settings used for recording. For details, refer to the camera manual.

Display the [Recording Schedules] window

1 Click [Window] > [Recording Schedules] to display the [Recording Schedules] window.



The [Repeating Weekly Schedules] tab is selected whenever the [Recording Schedules] window is displayed.



(1) [Add Schedule Item], [Edit], [Delete]
Add, edit or delete a schedule item.

(2) [Zoom] slider
Zoom in and zoom out the time line of the schedule area.

(3) [Search for] box
Find the camera that will be assigned the recording schedule.

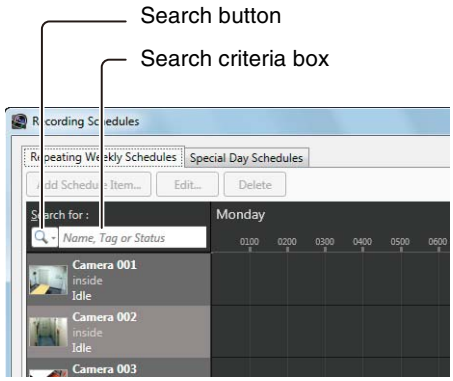
(4) Schedule area
Displays the currently registered cameras and their corresponding weekly schedules, arranged by day of the week.

(5) [Close]
Closes this window.

Select a Camera

When you have a large number of cameras registered, search for the camera using the camera name or any associated tags.

1 Click the search button and specify the search criteria.



The following items are displayed when you click the search button.

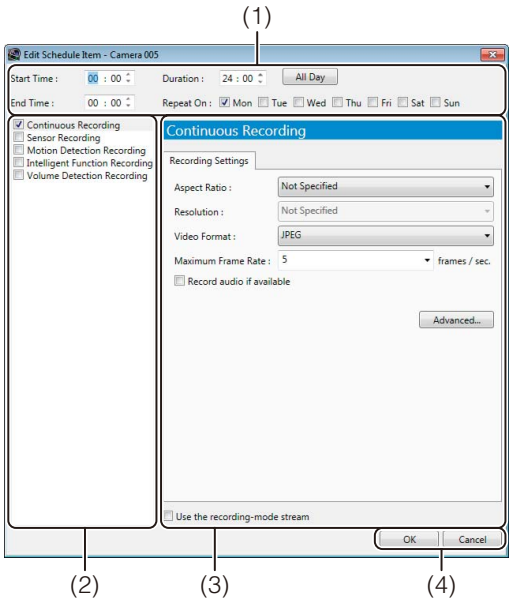
- [Name, Tag or Status]
  Enter the camera name, any associated tags, or the camera status in the search criteria box.
- [Camera Name]
  Enter the camera name in the search criteria box.
- [Tag]
  Select the camera tag to be searched.
- [Camera Status]
  Select the status to be searched.
- [Camera Type]
  Select the model name to be searched.
- [Host Name]
  Enter the camera host name or IP address in the search criteria box.
- [Storage Server Group Name]
  Searching by this item is not available.

2 Specify the search criteria and search for the camera.

Set a Weekly Schedule

1 In the schedule area, click the camera that you want to add the schedule to.

2 Click [Add Schedule Item] to display the [Edit Schedule Item] dialog box.



(1) Recording time settings area
Specify the day of the week and the start and end time of the recording period.

(2) Recording mode list
Select the recording mode.

(3) Recording settings area
Configure the settings for the recording mode selected in (2).

(4) [OK] and [Cancel]
Close the dialog box.

Specify the Recording Period and Day of the Week

1 Specify the recording period.

- To record for the entire day without specifying a start and end time, click [All Day].
- To specify a recording period, enter the start time in [Start Time] and the end time in [End Time]. Use these items when you want to specify a recording time that goes past midnight, such as when recording late into the night. Alternatively, select a duration for the recording (minimum of 15 min.) in the [Duration] field.

2 Select the check boxes for the days of the week on which to repeat the recording in [Repeat On].

Important

To use one Storage Server with more than 32 cameras connected to it, set the start time of the recording schedule leaving 15-minute intervals or longer so that the recording schedules of 33 or more cameras do not start at the same time.

Note

- You cannot specify overlapping recording schedules on the same camera.
- The time of the recording schedules is based on the Storage Server clock. We recommend that you synchronize the clocks on all the Storage Server you are using.
- If you set the operating system to automatically handle daylight saving time, the time will be automatically adjusted on the first and last days of the daylight saving time period.

Specify the Recording Mode

1 Select the check box next to the recording mode in the list that best suits the type of recording you require.

For example, if you want continuously record for the entire duration of the recording schedule, select the check box next to [Continuous Recording].

2 Configure the recording mode settings in the recording settings area.

The settings are different for each recording mode.

- Continuous recording
  Records continuously for the specified recording period. For details, see “Continuous Recording Settings” (p. 82).
- Sensor recording RM-64/25/9
  Starts recording when there is a signal from a sensor connected to the camera. For details, see “Sensor Recording Settings” (p. 83).
- Motion detection recording RM-64/25/9
  Starts recording when motion is detected. For details, see “Motion Detection Recording Settings” (p. 84).
- Intelligent function recording RM-64/25/9
  Starts recording when motion that meets the intelligent function detection criteria is detected. For details, see “Intelligent Function Recording Settings” (p. 87).
- Volume detection recording RM-64/25/9
  Starts recording when the volume detection criteria are met. For details, see “Volume Detection Recording Settings” (p. 87).

S30 S31 S80x S90x H43 H41 H630 H610 H730 H710 M42 M40 M620 M600 M720 M700
Use intelligent function recording instead of motion detection recording.

C500 C60 C50F C50i
Intelligent function recording is not supported. Use motion detection recording.

C500 C60 C300 C50F C50i
Volume detection recording is not supported.

C300
Intelligent function recording and motion detection recording using the camera are not supported.

Note

- You can specify the priority of the events generated by sensor recording, motion detection recording, intelligent function recording and volume detection recording. For details, see p. 83 and p. 84. When two events occur simultaneously, the event with the higher priority takes precedence.
- Lite Only supports continuous recording mode.

Hint

You can specify more than one recording mode at the same time. For example, you can select motion detection recording and specify a frame rate that is higher than continuous recording. This way, a high frame rate is used only when motion is detected.

Specify Advanced Settings

Advanced settings are available when the [Advanced] button is displayed in the recording settings area. For details, see “Configure the Advanced Recording Settings” (p. 88).

Save the Recording Schedule

1 Click [OK] to close the dialog box.

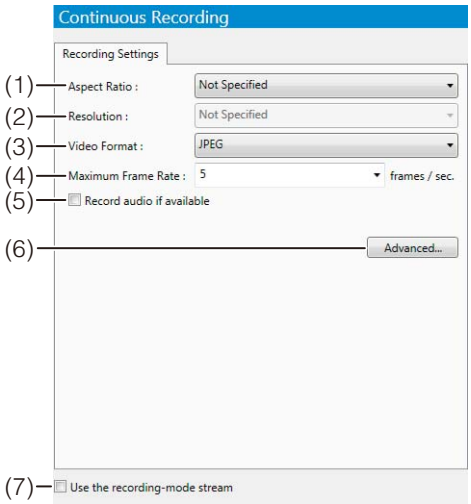
The schedule that was set is displayed in the schedule area. The schedule becomes active as soon as it is displayed in the schedule area.

Configure the Recording Mode

■ Continuous Recording Settings

1 Click [Continuous Recording] in the recording mode list and select the check box.

2 Configure the video recording settings.



(1) [Aspect Ratio]
Specify the aspect ratio ([4:3] or [16:9 (4:3)]).
If you select [Not specified], the camera's aspect ratio setting is used for recording.

(2) [Resolution]
Specify the resolution when [Aspect Ratio] is set to [4:3] or [16:9 (4:3)].
If you select [Not Specified] for the [Resolution], the camera's resolution setting is used for recording.

(3) [Video Format]
Specify the video format ([JPEG], [MPEG-4] or [H.264]).
The available formats depend on the camera model.

(4) [Maximum Frame Rate]
Specify the maximum frame rate (number of frames recorded in one second) in the range from 0.1 to 30 frames per second (fps).

(5) [Record audio if available]
Select this check box if you want to record audio together with the video.

(6) [Advanced]
Displays the [Advanced Recording Settings] dialog box. For details, see "Configure the Advanced Recording Settings" (p. 88).

(7) [Use the recording-mode stream]
Enable the recording stream function. With this function, the camera temporarily stores the video in its own memory before sending it to the Storage Server. This can help reduce the effects of non-uniform network traffic (jitter).

Important

- The three video receive sizes in each set, for example [480x270 (320x180 / 320x240)], in the [Video Receive Size] submenu are sizes that correspond to the category [1080p category (720p category / 4:3 category)], respectively. Which of the three sizes that is used is determined by the size set in [Video Size Set] for the camera.
- H41 H610 H710
  The video size is set to "480x270" when [480x270 (320x180 / 320x240)] is selected in [Video Receive Size]. To set "320x240," select [4:3] in [Aspect Ratio] and select [320x240] in [Video Receive Size].
- You can save JPEG images of the recorded stream to an SD memory card in the camera using [Use the recording mode stream] if the stream could not be distributed due to a network failure. Images are saved at a frame rate of 1 fps. For details, see the camera manual.
- The size of the recording data increases as the resolution and frame rate become higher. Make sure there is sufficient hard disk space available before specifying a higher resolution and frame rate.
- If you select [MPEG-4] or [H.264], the [Storage Server] option in [Detect Motion Using] cannot be selected.
- Even if the [Record audio if available] check box is selected, audio will not be recorded if the audio sending function has not been activated on the camera. If you schedule a recording, make sure the audio sending function on the camera has been set to [Enable].

Note

- If you select [MPEG-4] or [H.264] for the [Video Format] setting, the [Aspect Ratio] and [Maximum Frame Rate] settings cannot be changed. The settings on the camera are used for recording.
  Lite Only supports [JPEG] for the [Video Format].
- It may not be possible to record at the specified frame rate or recording may pause intermittently, depending on the load on the Storage Server CPU or the hard disk.
- Recording may be performed at lower than the specified frame rate, depending on the number of Viewers that are accessing the camera, the load on the camera and Storage Server, variation in network traffic, and the environment at the time of recording.
- Lite The maximum frame rate is 5 fps.
- Audio recording is enabled when the recording mode is selected. You cannot schedule audio-only recording.
- If [MPEG-4] or [H.264] recording format is used, the recorded audio will not be in sync with the recorded video. If [JPEG] recording format is used, the recorded audio will be in sync with the recorded video for the most part, however it is not guaranteed that it will be completely in sync.

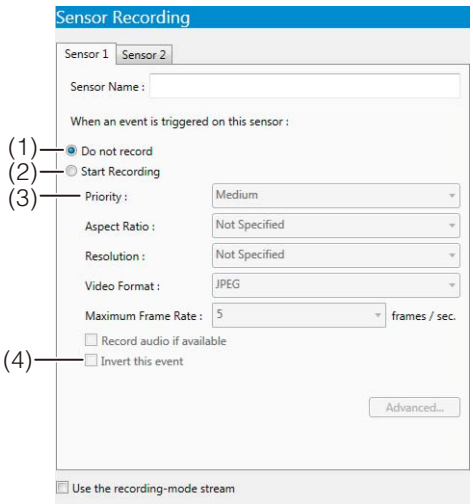
- Recording mode stream operates only with cameras that support the recording mode stream function and if a stream has been acquired.
- If an upload function is already being used on the camera, you cannot use the recording-mode stream function. To use the recording-mode stream function, select [Upload] > [Upload Disabled] on the setting page of the camera.
- To use recording mode stream, select [Video Format] > [JPEG], and set [Maximum Frame Rate] to “10” or lower value.
- When the recording-mode stream function is used, the streamed video has a higher priority than the live video. Depending on the load on the camera, such as the number of Viewers that are simultaneously connected to the camera, display of the live video may stop.

■ Sensor Recording Settings

RM-64/25/9

1 Click [Sensor Recording] in the recording mode list and select the check box.

2 Configure the video and event settings.



(1) [Do not record]
Select to not record even when there is a signal from this sensor.

Hint

You can individually enable or disable recording for each sensor. For example, you may not want to record when there is door sensor signal, but to start recording when there is a window sensor signal.

(2) [Start Recording]
Start recording when there is a signal from the sensor. After selecting the item, configure the recording settings below the item.

(3) [Priority]
Select the event priority. For details, see “Check Events” (p. 109).

(4) [Invert this event]
Start recording when the input from the sensor disappears.
For example, start recording when there is no signal from the sensor, and stop recording when a signal is present.

The other settings are the same as those for continuous recording. For details, see “Continuous Recording Settings” (p. 82).

Important

- When you select the [Sensor Recording] check box in the recording mode list in step 1, [Do not record] is selected for all of the sensors. You must select [Start Recording] for at least one sensor to be able to start sensor recording.
- The sensor inputs can generate a large number of events for the Storage Server, thereby increasing the load on the server. For reference, if the Storage Server is continuously receiving more than 10 events per minute, we recommend that you use continuous recording mode.
- If the recording period for a schedule ends while sensor recording is in progress, recording will stop.

Note

- The number of tabs depends on the number of compatible external devices (sensors) that are connected to the camera.
- The name of the external device that is registered in the camera is displayed in the [Sensor Name] box.
- If a sensor recording is triggered with the same priority as one that is currently recording, the second sensor will be given priority and begin recording. The remainder of the first recording sensor, if any, will continue recording after the second sensor ends.

■ Motion Detection Recording Settings RM-64/25/9

Important

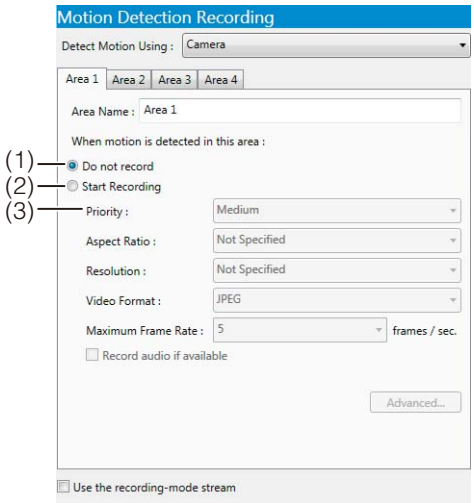
The motion detection feature is not suitable for applications where high reliability is required. We recommend that you do not use the motion detection feature in applications such as surveillance, which require high reliability. Canon cannot take responsibility for any accidents or damages associated with using the motion detection feature.

Using the Camera for Motion Detection

1 Click [Motion Detection Recording] in the recording mode list and select the check box.

2 Select [Camera] from [Detect Motion Using].

3 Configure the recorded video and event settings on each area tab.



(1) [Do not record]
Select this item if you do not want recording to start when motion is detected.

Hint

You can use this setting to individually enable or disable recording for each area. For example, you may want to record when motion is detected around a vault, but not record when motion is detected around an entrance.

(2) [Start Recording]
Start recording when motion is detected.

(3) [Priority]
Select the event priority. For details, see “Check Events” (p. 109).

The other settings are the same as those for continuous recording. For details, see “Continuous Recording Settings” (p. 82).

C50F C50i

To use motion detection, you must create a schedule with motion detection using the camera's schedule setting tool.

Note

- If the camera supports four motion detection areas, tabs named [Area 1] through [Area 4] are displayed in the recording settings area. You can specify settings individually for each motion detection area.
- The [Area Name] box displays the name of the area that is registered in the camera.
- To use a camera for motion detection, you must configure the motion detection settings on the camera. For details, see the camera manual.
- When using the camera for motion detection with more than one motion detection area, you can specify the event priority for each area.
- Motion detection is suspended when the camera is panning, tilting or zooming, irrespective of the motion detection settings.
- If motion is detected in multiple motion detection areas that have the same priority, recording will start with the area having the lowest number.

Using the Storage Server for Motion Detection

Important

The load on the Storage Server CPU increases when motion detection is performed on the Storage Server. We strongly recommend that you use the motion detection on the camera, if it is available.

Note

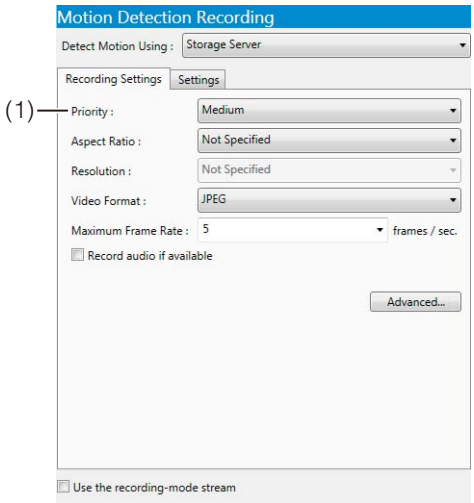
If you select [MPEG-4] or [H.264] in [Video Format], the [Storage Server] option in [Detect Motion Using] cannot be selected. Note also that if you select [MPEG-4] or [H.264] in other recording modes besides motion detection recording, the [Storage Server] option still cannot be selected.

1 Click [Motion Detection Recording] in the recording mode list and select the check box.

2 Select [Storage Server] in [Detect Motion Using].

3 Configure the recorded video and event settings on the [Recording Settings] tab.

[Recording Settings] tab

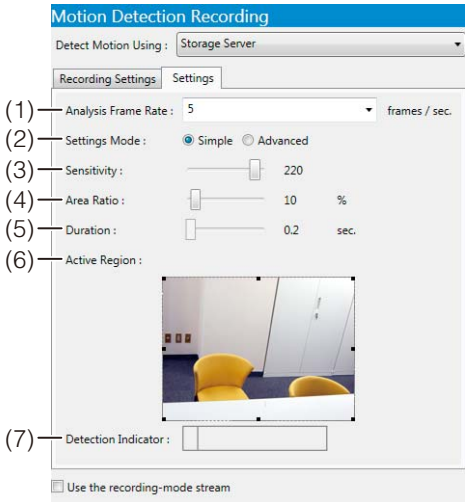


(1) [Priority]
Select the priority of the motion detection events. For details, see "Check Events" (p. 109).

The other settings are the same as those for continuous recording. For details, see "Continuous Recording Settings" (p. 82).

4 Configure the motion detection settings on the [Settings] tab.

[Settings] tab



(1) [Analysis Frame Rate]
Specify the motion detection frame rate (frames per second).

(2) [Settings Mode]

- [Simple]
  [Sensitivity] and [Area Ratio] can only be set using the sliders. [Duration] is fixed at 0.2 seconds.
- [Advanced]
  Makes the [Sensitivity], [Area Ratio] and [Duration] settings available so that values can be set.

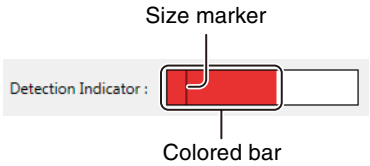
(3) [Sensitivity]
Specify the motion detection sensitivity within the range of 1 to 256. Increase the number to increase the sensitivity.

(4) [Area Ratio]
Specify the area of the preview video that the Storage Server uses for motion detection. The range is 0 to 100%. The size marker inside the Detection Indicator changes position depending on the value of this setting.

(5) [Duration]
Specify the length of time the motion signal must be present to decide that there is motion. The range is 0 to 5.0 seconds.

(6) [Active Region]
Displays a preview video from the camera used for motion detection.
Displays a dotted-line frame representing the active region on top of the preview video. Drag the frame handles to make it larger or smaller.

(7) [Detection Indicator]



The size marker changes position depending on the value of the [Area Ratio] setting. Adjust the motion detection settings while viewing the preview video and the Detection Indicator.
The colored bar changes depending on the value of the [Sensitivity] and the [Area Ratio] settings.

Color of the Colored Bar	Meaning
Green	The detected motion does not exceed the values specified in [Sensitivity] and [Area Ratio]. In this case, the colored bar remains to the left of the size marker.
Red	The detected motion exceeds the values specified in [Sensitivity] and [Area Ratio]. In this case, the colored bar remains to the right of the size marker.

Important

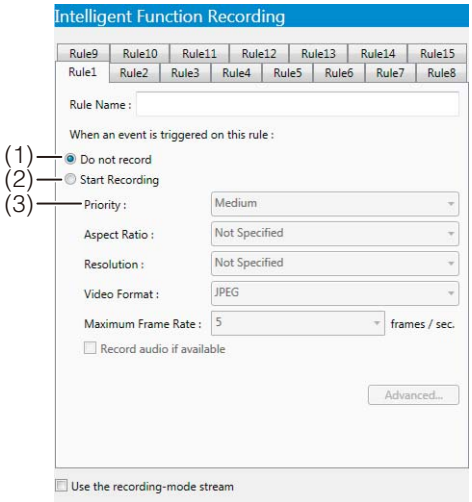
- If the recording period for a schedule ends while motion detection recording is in progress, recording will stop.
- The detection indicator is not affected by the [Duration] setting. Be sure to take the detection time into account when adjusting the motion detection settings.
- To perform motion detection on the Storage Server, you must specify [JPEG] for the [Video Format]. Also, if you simultaneously use more than one recording mode, all the [Video Format] settings must be [JPEG]. An error message is displayed if you try to use a format other than [JPEG] and motion detection on the Storage Server at the same time.
- Make the [Priority] setting on the [Recording Settings] tab lower than the priority of any of the other recording settings.

■ Intelligent Function Recording Settings

RM-64/25/9

1 Click [Intelligent Function Recording] in the recording mode list and select the check box.

2 Configure the recording and event settings on each rule tab.



(1) [Do not record]
Do not record when the conditions for this rule are met.

(2) [Start Recording]
Start recording when the conditions for this rule are met. After selecting the item, configure the recording settings below the item.

(3) [Priority]
Select the event priority. For details, see “Check Events” (p. 109).

The other settings are the same as those for continuous recording. For details, see “Continuous Recording Settings” (p. 82).

Important

If the recording period for a schedule ends while intelligent function recording is in progress, recording will stop.

Note

- Tabs named [Rule 1] through [Rule 15] are displayed, as shown. Each tab can be configured individually.
- The name of the rule is displayed in [Rule Name].

Hint

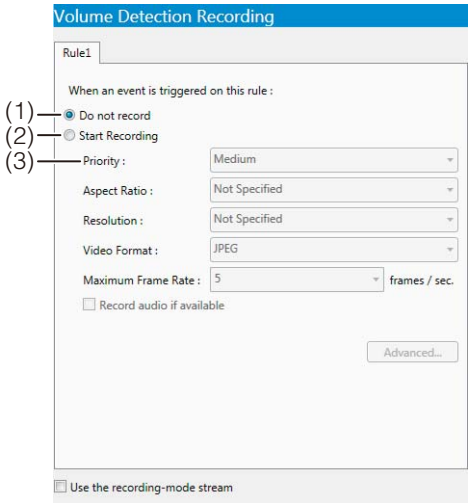
To use intelligent function recording, you must configure the intelligent function recording settings on the camera. For details, see the camera manual.

■ Volume Detection Recording Settings

RM-64/25/9

1 Click [Volume Detection Recording] in the recording mode list and select the check box.

2 Configure the recording and event settings.



(1) [Do not record]
Do not record when audio is detected.

(2) [Start Recording]
Start recording when audio is detected. After selecting the item, configure the recording settings below the item.

(3) [Priority]
Select the event priority. For details, see “Check Events” (p. 109).

The other settings are the same as those for continuous recording. For details, see “Continuous Recording Settings” (p. 82).

Important

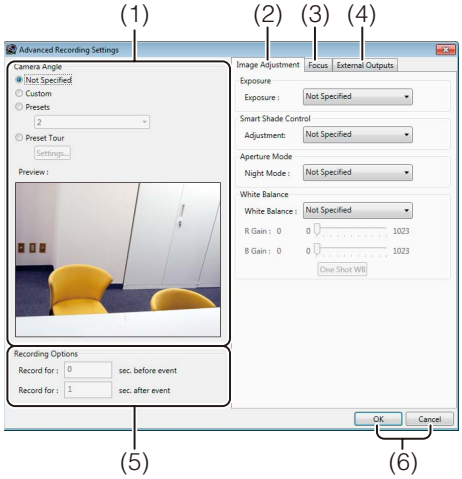
If the recording period for a schedule ends while volume detection recording is in progress, recording will stop.

Hint

To use volume detection recording, you must first configure the volume detection recording settings on the camera. For details, see the camera manual.

Configure the Advanced Recording Settings

Click [Advanced] in the recording mode settings area to display the [Advanced Recording Settings] dialog box and configure the operation when recording starts.



(1) [Camera Angle]
Specify the camera angle for recording.

(2) [Image Adjustment] tab
Adjust the video quality.

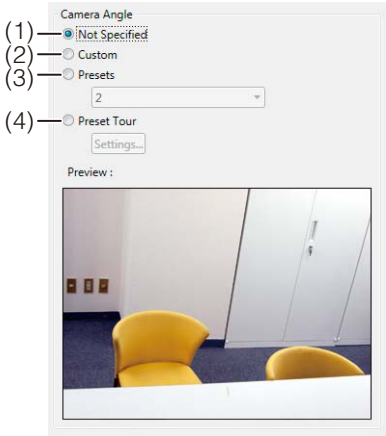
(3) [Focus] tab
Adjust the focus.

(4) [External Outputs] tab
Enable or disable output to external devices registered on the camera.

(5) [Recording Options]
Specify the duration of recording before and after an event.

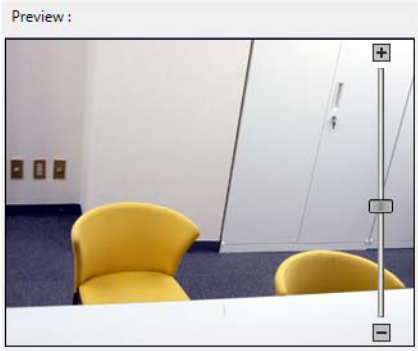
(6) [OK] and [Cancel]
Close the dialog box.

■ Specify the Camera Angle for Recording



(1) [Not Specified]
Select this item when you do not want to specify the camera angle.

(2) [Custom]
Specify the camera angle using the [Preview] window.



Drag the slider to change the camera zoom and click or drag inside the video to change the camera angle.

(3) [Presets]
Select the camera angle from the list of preset camera angles registered in the camera.

(4) [Preset Tour]
Move the camera through a series of preset camera angles while recording. Click [Settings] to display the [Preset Tour Settings] dialog box, and then specify the order of the presets.

S80x S90x H630 H610 H730 H710
[Presets] and [Preset Tour] are unavailable.

C50F
[Preset Tour] is unavailable.

C300
If you use the digital zoom when setting the preset angle with the camera, the viewing angle seen when the setting is made and the viewing angle that will be recorded may be different.

C60 C300 C50i

If you initialize the head position (the camera points the head forward, reinitializes, and then returns the head to the former position) during recording, the video during the movement of the head will also be recorded.

C50F C50i

When an external camera is connected and [Use External Video Input] is enabled, the settings on this dialog box are unavailable.

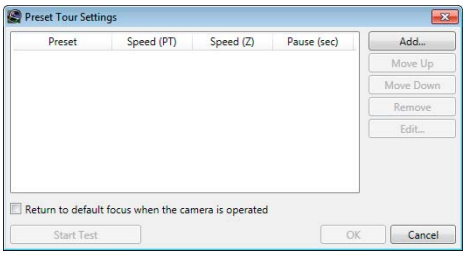
Note

- Clicking the [Settings] button alone does not perform a preset tour. You must first configure the settings in the [Preset Tour Settings] dialog box.
- You are not able to specify camera angle settings when configuring the intelligent function, configuring motion detection settings with [Detect Motion Using] > [Camera], or when configuring multiple cameras. You are not able to specify [Preset Tour] settings when configuring motion detection settings with [Detect Motion Using] > [Storage Server].
- To be able to select [Presets] or [Preset Tour], you must first register camera angle presets on the camera. For details, see the camera manual.
- Changing the preset name on the camera after making [Presets] or [Preset Tour] settings will be disabled those settings. If you want to change the preset name, be sure to repeat the [Presets] or [Preset Tour] settings after you change the preset name.

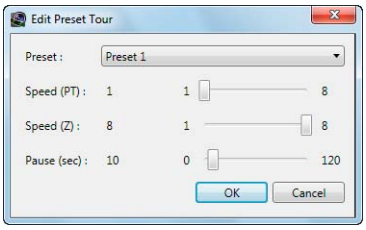
Configuring a Preset Tour

Select [Preset Tour] in the [Camera Angle] settings and specify the order of the presets that are registered in the camera.

1 Click [Settings] to display the [Preset Tour Settings] dialog box.



2 Click [Add] to open the [Edit Preset Tour] dialog box.

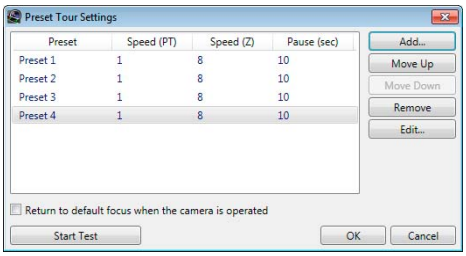


3 Select a preset from the [Preset] list.

4 Configure the speed and pause settings using the sliders ([Speed (PT)], [Speed (Z)], and [Pause (sec)]).

5 Click [OK].

6 Repeat steps 2 to 5 for additional presets.



Selecting [Return to default focus when the camera is operated] enables you to restore the focus settings to the default ("Auto") during the preset tour.

7 Specify the order of the presets.

The tour starts with the first preset and proceeds down the list. Change the order by selecting a preset, and then clicking [Move Up] or [Move Down].
To remove a preset, select the preset and click [Remove]. To edit a preset in the list, select the preset and click [Edit].

8 Click [OK] to close the dialog box.

Important

- Using preset tour with MPEG-4 or H.264 format will consume a large amount of disk space.
- The preset tour settings can effect the durability of the camera's pan/tilt mechanism.

Note

The camera returns to the first preset position after reaching the last preset position.

Hint

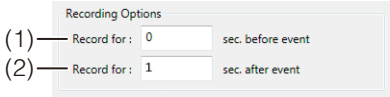
Click [Start Test] to run through the preset tour once to confirm your settings.

About the Warning Message Displayed During the Preset Tour

Depending on the preset tour settings, a warning message about the camera's pan/tilt mechanism may be displayed when you click [OK] to close the [Preset Tour Settings] dialog box. If this happens, consider changing the settings according to the following guidelines.
A warning will appear when the pan/tilt mechanisms reach their estimated lifetime of 100,000 round trips over the full range of motion.

■ Specify the Option for Recording Before and/or After an Event RM-64/25/9

You can record a number of seconds before and/or after an event, such as sensor input or intelligent function, using the [Recording Options] setting.



(1) [sec. before event]
Number of seconds to record before an event (max. 30 seconds).

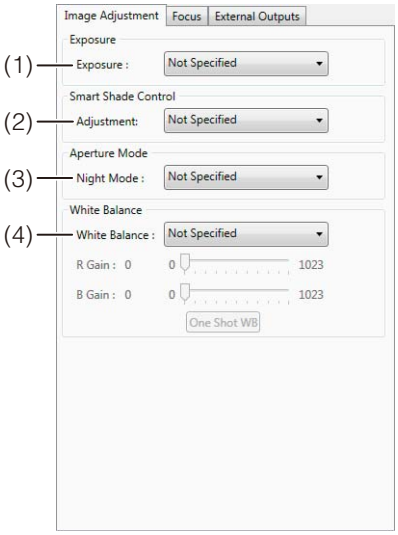
(2) [sec. after event]
Number of seconds to record after an event (max. 999 seconds).

Note

- [Recording Options] cannot be specified when setting continuous recording.
- Even if [sec. before event] and [sec. after event] are both set to 0, recording will continue when events are continuously generated.
- The higher the value for [sec. before event], the greater the memory usage for the Storage Server. If the Storage Server has insufficient memory, the server will run out of virtual memory, which consumes hard disk space, significantly reducing processing performance.
- If you specify a preset camera angle for sensor recording, the camera angle will change to the preset angle when sensor recording starts. Therefore, the camera angle of the recording before the sensor recording event will be different from the one after the event. If [Recording Options] is set to record a short time after an event and the sensor input is very short, recording may stop before the camera reaches the preset camera angle.

■ Adjust the Video Quality

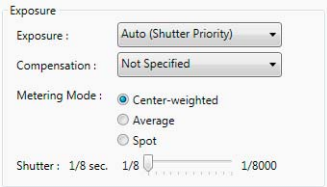
[Image Adjustment] tab



(1) [Exposure]
The settings change according to the selected exposure setting.

- [Not Specified]
  Use the camera's exposure setting.
- [Auto]
  Automatically control the exposure.
- [Auto (Flickerless)]
  Reduce flicker from light sources, such as fluorescent lighting. The shutter speed is automatically adjusted according to the lighting conditions.
- [Auto (Shutter Priority)]
  Specify the shutter speed.

The following exposure compensation setting is displayed when [Auto], [Auto (Shutter Priority)] or [Auto (Flickerless)] is selected.



[Compensation]: Specify exposure compensation. Select negative values to darken the video and positive values to lighten the video. To disable exposure compensation, specify [Not Specified].

[Metering Mode]: Specify the metering mode setting: [Center-weighted], [Average], or [Spot].

Metering mode	Description
Center-weighted	Meters the entire video, focusing on the center of the video. A correct exposure is obtained for a subject near the center of the video, even though the periphery may be slightly darker or lighter. Use for subjects that are in the center of the video.
Average	Meters an average of the entire scene. A uniform exposure is obtained even when the scene has significant differences in brightness. Use for scenes where, for example, cars are passing through or people are entering and exiting.
Spot	Meters the center of the scene. The correct exposure is obtained for a subject near the center of the scene, irrespective of the brightness of the periphery. Use if the subject is lit by a spotlight or is backlit, where the exposure should be adjusted to the center of the scene.

[Shutter]: Specify the shutter speed when [Exposure] is set to [Auto (Shutter Priority)] or [Manual].

- [Manual]
  Compensate for the exposure manually. The following exposure compensation settings are displayed.

[Iris]: Specify the iris setting. Drag the slider to the left to close down the iris and make the video darker or to the right to open up the iris and make the video brighter.
[Shutter]: Specify the shutter speed.
[Gain]: Specify the gain (sensitivity to brightness). Drag the slider to the left to decrease the gain and make the video darker or to the right to increase the gain and make the video brighter.

Note

The [Auto (Flickerless 2)] setting is not supported.

(2) [Smart Shade Control]:
Specify a value to use for the camera's smart shade control feature when recording.
[Not Specified]: Record using smart shade control value configured on the camera.
[Off]: Record with the smart shade control disabled.
[Auto]: Set smart shade control to automatic.
[1] to [7]: Select one of seven strength levels when setting the smart shade control function manually.

(3) [Aperture Mode]
Specify the camera aperture mode.

[Night Mode]

- [Not Specified]
  Use the camera's night mode function settings.
- [Disabled]
  Disable the night mode function.
- [Enabled]
  Record in night mode.
- [Auto]
  The camera automatically decides when to switch to night mode. When recording ends, the night mode setting returns to the value before recording started.

(4) [White Balance]
Specify the appropriate white balance by selecting one of the camera's light source settings displayed in the list.
If [Manual] is selected, use one of the following two methods to adjust the white balance.

- [R Gain] and [B Gain]
  Specify the white balance parameters by dragging the sliders. Drag to the right to increase the gain (the sensitivity to brightness).
- [One Shot WB]
  Force white balance adjustment to a light source. Using a white object (such as piece of white paper) as a standard, fill the shot with the object and click this button.

C300 C50F C50i
It may take approximately 30 sec. for exposure, night mode and white balance settings to be reflected in the view after recording starts.

Important

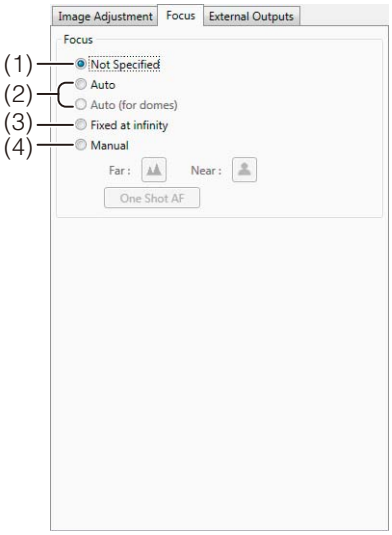
If you select [Enabled] for Night Mode, you will not be able to set the white balance. If you select [Auto] for Night Mode, however, you will be able to set the white balance, but those settings will be cleared when the camera switches to Night Mode.

Note

When [Night Mode] is enabled in [Aperture Mode], both the display and recorded video are in black and white.

■ Adjust the Focus

[Focus] tab



(1) [Not Specified]
Record using the existing focal position of the camera.

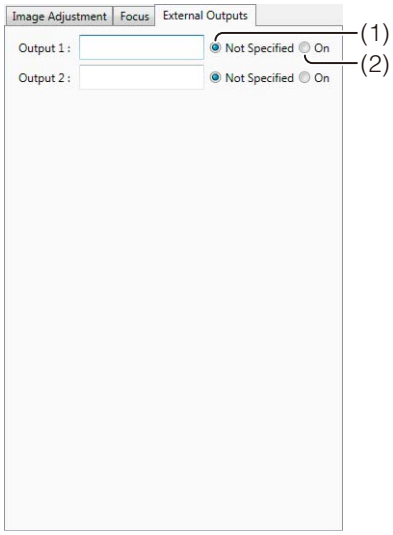
(2) [Auto] and [Auto (for domes)]
Automatically focus the video.
Use [Auto (for domes)] for cameras equipped with an indoor dome housing. The setting prevents the camera from focusing onto the dome surface.

(3) [Fixed at infinity]
Fix the focal point at infinity.

(4) [Manual]
Adjust the focus manually by clicking the [Far] or [Near] button.
Click [One Shot AF] to focus once on the current subject and then return to manual focus.

■ Configure External Outputs

[External Outputs] tab



Enable or disable output to external devices registered on the camera when the recording schedule starts.

(1) [Not Specified]
Disable the external output.

(2) [On]
Enable the external output.

Note

- You must first specify the external device settings on the camera. For details, see the camera manual.
- The number of external outputs is different for different camera models.
- The external outputs are enabled only during recording.

Hint

This feature can be used with sensor recording, motion detection recording, intelligent function recording or volume detection recording. For example, by connecting a buzzer to an external output and enabling the output for motion detection recording, the buzzer will sound when motion is detected.

Record at Specific Times (Special Day Schedule Settings) RM-64/25/9

Use special day schedules to record on exceptional days, such as public holidays.

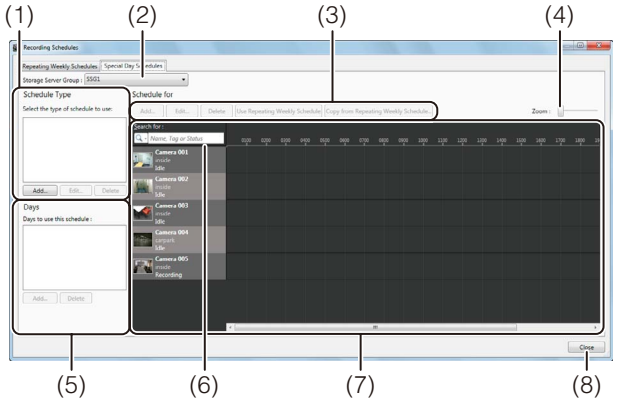
Important

When you assign a special day schedule to a number of cameras, the weekly schedules assigned to the remaining cameras for the special day are disabled. To reapply the weekly schedules for that day to the remaining cameras, import the weekly schedule for the day of the special day schedule. For details on importing a weekly schedule, see “Import from a Weekly Schedule” (p. 96).

Display the [Special Day Schedules] Tab

1 Click [Window] > [Recording Schedules] to display the [Recording Schedules] dialog box.

2 Click the [Special Day Schedules] tab.



(1) Special day schedule type
Add, edit or delete a special day schedule type.

(2) [Storage Server Group]
Display the Storage Server Group name.

(3) Special day schedule settings

- [Add], [Edit], and [Delete]
  Add, edit or delete a special day schedule.
- [Use Repeating Weekly Schedule]/[Not Use Repeating Weekly Schedules]
  Enable or disable the special day schedule for the applicable day of the weekly schedule registered on the selected camera.
- [Copy from Repeating Weekly Schedule]
  Specify a day of an existing weekly schedule registered on the selected camera, and import it as a special day schedule.

(4) [Zoom] slider
Zoom in and zoom out the timeline of the schedule area.

(5) Days area
Specify the day for the special day schedule selected in (1).

(6) Camera search
Find the camera that will be assigned the schedule.

(7) Schedule area
Displays the currently registered cameras and their corresponding recording schedules by day.
This area also has a search function for finding cameras using search criteria, such as the camera name or tags. For details, see “Select a Camera” (p. 79).

(8) [Close]
Close this window.

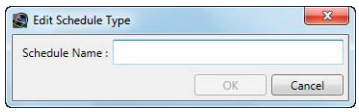
Note

A special day schedule takes precedence over a weekly schedule.

Create a Special Day Schedule

Special Day recording schedules are set by the day.

1 Click [Add] in the schedule type area.



2 Enter the name of a special day schedule and click [OK].

The name is added to the schedule type area.

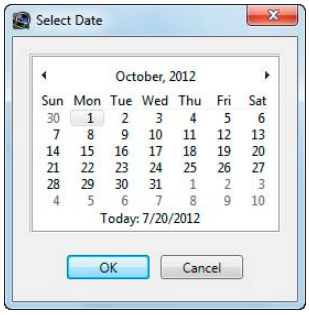
Note

Before deleting a schedule name from the schedule type area, first delete the applicable day from the days area.

Specify the Day for the Special Day Schedule

1 Click the schedule name you want to use in the schedule type area.

2 Click [Add] in the days area.



3 Specify the date for the special day schedule on the calendar and click [OK].

Note

- Special day schedules can only be set for a one-day time period (00:00 to 24:00). For example, for a three-day long weekend (Saturday, Sunday and Monday) you will need to set a separate schedule for each of the three days.
- You cannot apply different special day schedules to the same day.

Select a Camera

For details, see “Select a Camera” (p. 79).

Specify the Recording Settings

1 Select the schedule name in the schedule type area.

2 Specify the day to assign to the special day schedule in the days area.

3 Select the camera you want to use in the schedule area and click [Add].

4 Specify the special day schedule.

The setting items are the same as those for the [Edit Schedule Item] dialog box. For details, see “Set a Weekly Schedule” (p. 80).

■ Specify Advanced Settings

Advanced settings can be configured when the [Advanced] button is available in the recording settings area. For details, see “Configure the Advanced Recording Settings” (p. 88).

■ Save the Recording Schedule

1 Click [OK] to close the dialog box.

The schedule is displayed in the schedule area. The schedule becomes active as soon as it is displayed in the schedule area.

Edit a Recording Schedule

Editing a Recording Schedule

1 Select the recording schedule you want to edit in the schedule area, and click [Edit].

2 Change the settings of the recording schedule.

For details on the settings in the [Edit Schedule Item] dialog box, see “Set a Weekly Schedule” (p. 80).

3 Click [OK] to close the dialog box.

Delete a Recording Schedule

1 Select the schedule that you want to delete in the schedule area.

2 Click [Delete].

The recording schedule is deleted.

Import from a Weekly Schedule

You can create a special day schedule for any day of the week by importing it from a weekly schedule.
You can also import a schedule whose day of the week is the same as the desired day, or you can directly specify the day of the week.

■ Import from a Weekly Schedule with the Same Day of the Week

1 Select a camera in the schedule area of the [Special Day Schedules] tab.

2 Click [Use Repeating Weekly Schedule].

When you click the button, its name changes to [Not Use Repeating Weekly Schedules] and any weekly schedules registered on the camera become semi-transparent. Click [Not Use Repeating Weekly Schedules] to stop the weekly schedule.

Important

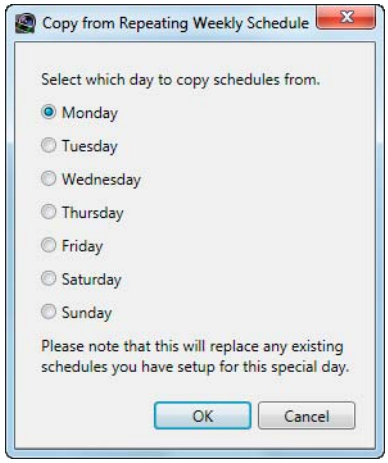
- If you use [Use Repeating Weekly Schedule] to import a weekly schedule to a schedule that already has a special day schedule, the imported schedule will overwrite the existing schedule.
- You cannot edit a weekly schedule that was imported using [Use Repeating Weekly Schedule] on the [Special Day Schedules] tab. To modify an imported weekly schedule, make a copy of it by referring to “Import by Specifying the Day of the Week” (p. 96).

■ Import by Specifying the Day of the Week

You can copy from a weekly schedule by specifying the day of the week to copy. Using this procedure, you are able to edit the recording schedule after making the copy.

1 Select a camera in the schedule area.

2 Click [Copy from Repeating Weekly Schedule].



3 Select a day of the week and click [OK].

Hint

Importing by specifying the day of the week can be used to import the schedule for any of the days of the week contained in the weekly schedule. For example, you can import the schedule of a day of the week that is different from the day of the week of the target day.

Chapter 6

Day-to-Day Operations

- ❏ Viewing live video
- ❏ Playing recordings
- ❏ Operating a camera
- ❏ Changing the layout of a video window
- ❏ Viewing and checking events

Flow of Operations

View recorded video

Record Now (p. 100)	Play a recording (p. 102)
Save a snapshot of the displayed video (p. 100)	Save part of a recording (p. 104)
Search for a recording (p. 101)	Zoom in/out of the Viewer display (p. 103)

↓

View live video

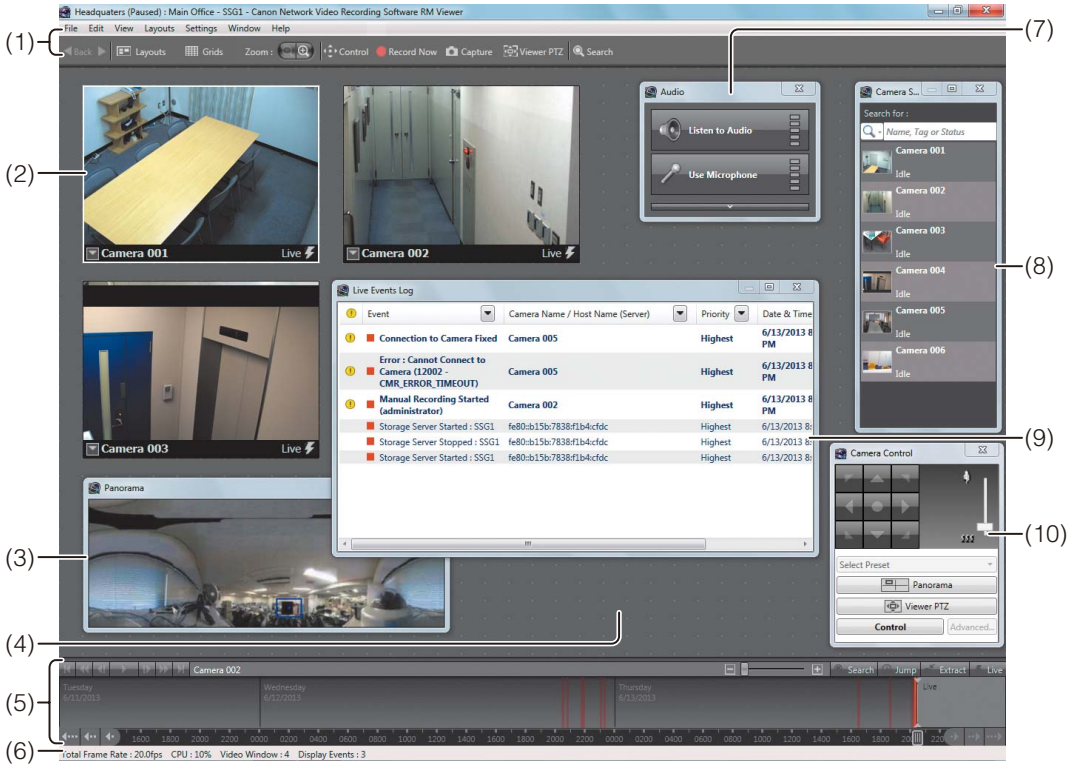
Get control of a camera (p. 105)	Change the camera angle using a panorama image (p. 107)
Use the pan/tilt/zoom feature (p. 106)	Play back audio (p. 107)
Change the camera angle to a preset position (p. 106)	Compensate for dark regions in the video (p. 108)

↓

Check events

View a live event (p. 109)	Search for events (p. 110)

Viewer Features



(1) Menu bar and toolbar
Access this software's functions. The toolbar provides easy access to commonly used functions.

(2) Video window
Display live video from a camera or playback from a recording.

(3) [Panorama]
Change the camera angle using a panorama image.

(4) Viewing area
Place a video window in this area. You can display a grid for arranging video windows.

(5) Timeline
Display the time and date and events that have occurred. Click an event to play back the recording.

(6) Status bar
Displays Viewer status messages and CPU load.

(7) [Audio]
Listen to live audio and transmit audio using the camera's two-way audio feature.

(8) [Camera Selector]
Display and select cameras added to the Storage Server Group.

(9) [Live Events Log]
Display events that occurred one hour or less after Viewer startup.

(10)[Camera Control]
Get control of the camera and change the camera angle.

View Recorded Video

Record Now

Start recording while watching the live video. The recording format is JPEG.

1 Click the video window displaying the video to be recorded.

A white frame surrounding the selected video window is displayed.

2 Click [Record Now] on the toolbar.

Recording starts. The upper part of the window is red when recording. Recording stops automatically after the set time period.

Lite

The maximum frame rate is 5 fps.

Important

- [Record Now] records at the maximum frame rate. Be sure to take into account how much hard disk space is used.
- The recording duration can be specified, however, the actual duration may depend on various settings and on network delay.

Note

- Audio is also recorded if audio is available from the camera.
- The [Record Now] duration can be changed. For details, see "Configure the Viewer Display and Operation Settings" (p. 63).

Hint

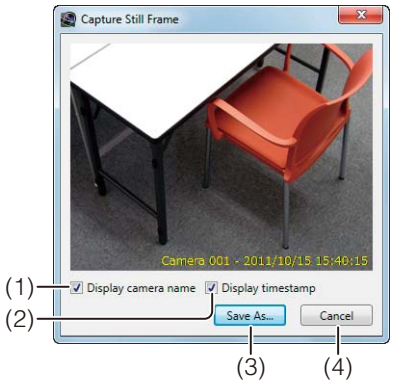
You can use [Record Now] to immediately record during a period where there is no recording schedule set.

Save a Snapshot of the Displayed Video

You can take a snapshot of the displayed video and save the still image.

1 Click [Capture] on the toolbar to display the [Capture Still Frame] dialog box.

2 Set the still image to be saved.



(1) [Display camera name] check box
Select this check box if you want to add the camera name to the still image.

(2) [Display timestamp] check box
Select this check box if you want to add the time and date to the lower right side of the saved still image. (You cannot specify the position, font, size or color.)

(3) [Save As]
Save the preview video.

(4) [Cancel]
Closes the dialog box.

3 Click [Save As].

The [Save As] dialog box appears.

4 Specify the file name and storage location and click [Save].

The file is saved in the specified location and the focus is placed on the [Capture Still Frame] dialog box again.

5 Click [Cancel] to close the dialog box.

Important

- If the camera is disabled on the [Advanced] tab of the camera properties, or even if the power of the camera is off, a still image of the recorded video during playback can be saved.
- Do not specify the Windows folder or the Program Files folder on the system drive as the destination. Video cannot be saved to these folders.

Note

- You cannot operate the preview when displaying the [Capture Still Frame] dialog box. You must operate the camera in advance to set its angle. For details on operating the camera, see "Operate the Camera" (p. 105).
- The .bmp file format is used for still images.
- The camera clock is used for the date and time of the on-screen display function, but the clock on the PC running RM Viewer is used for the date and time of snapshots.
- If the display position of snapshot text information is too low, it may overlap the display of the on-screen display function. It is recommended that snapshots be displayed in the top-left or top-right corner.

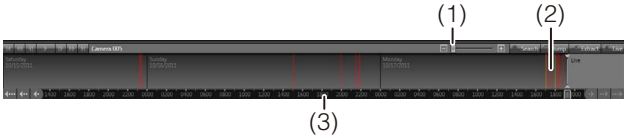
Search for a Recording

Video recorded using a recording schedule or [Record Now] is displayed on the timeline as events. You can search through the recordings to find the recording that you want to play back.

■ Search by Changing the Timeline

1 Click the video window.

2 Drag the timeline to display the time and date for the recording.



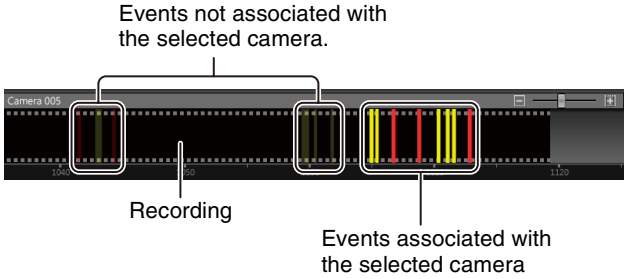
(1) Slider
Zoom out or zoom in the timeline.

(2) Event display area
Displays events according to the times they occurred.

(3) Time bar
Drag the bar to scroll through the timeline.
Change the recording period displayed in the timeline using the buttons at each end.

Button	Description
	Go back one week
	Go back one day
	Go back 10% of the current time display
	Go forward 10% of the current time display
	Go forward one day
	Go forward one week

3 Click an event in the event display area.



Events displayed as film icons are videos recorded for that period. Click the event to play the recording. Events associated with the selected camera are also displayed in the event display area. (The color of these events represents their priority.) Click the event to play the recording.

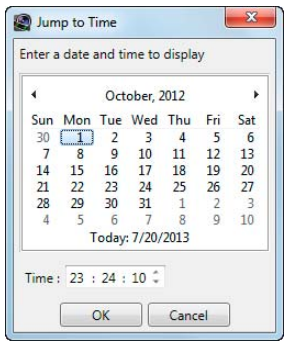
Note

- Events in the display area that are not associated with the selected camera (secondary events) are displayed as transparent. If you do not select a camera, all events are displayed as primary events (not transparent).
- Click [View] > [Timeline] to display/hide the timeline.

■ Search by Specifying the Time and Date

1 Click a video window.

2 Click [Jump] on the timeline to display the [Jump to Time] dialog box.



3 Specify the date and time and click [OK].

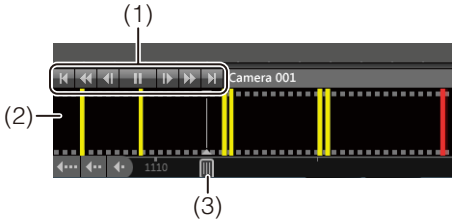
The playhead moves to the specified date and time and the recorded video starts playing in the video window.

■ Search by Event

Click [Search] on the toolbar or [Search] on the timeline toolbar to search for an event. Click the event in the search results to play the associated recording. For details, see “Play Back an Event” (p. 110).

Play a Recording

Use the playback controls on the timeline to control the video displayed in the video window.



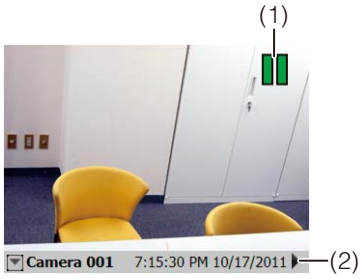
(1) Playback controls
Controls for video playback.

Button	Description
	Jump to previous event
	Fast reverse (each click changes the speed in sequence: 1x, 2x, 5x, 10x)
	Go to previous frame
/	Play/pause
	Go to next frame
	Fast forward (each click changes the speed in sequence: 2x, 5x, 10x)
	Jump to next event

(2) Event display area
Click to move the playhead to the playback position.

(3) Playhead
Drag the playhead to change the playback position.

Video Window Display for Playback



(1) Playback indicator
Displays the playback status.

(2) Title bar
Displays the camera name and the time and date of the recording.

Important

- You cannot use [Fast Reverse], [Previous Frame], and [Next Frame] for recordings in MPEG-4 or H.264 format.
- Because video data is being sent from the Storage Server to the Viewer during playback, playback response and smoothness depends on factors such as the amount of network traffic.
- The time displayed on the timeline corresponds to the clock on the computer where the Viewer is running.
- To play back a recorded video, set a time earlier than the current time that will allow recording 10 frames*. If you try to simultaneously record and play back video before 10 frames have been recorded, playback may be momentarily interrupted.
  * At a recording frame rate of 0.1 fps, 10 frames takes 100 seconds.
  At a recording frame rate of 1 fps, 10 frames takes 10 seconds.

Note

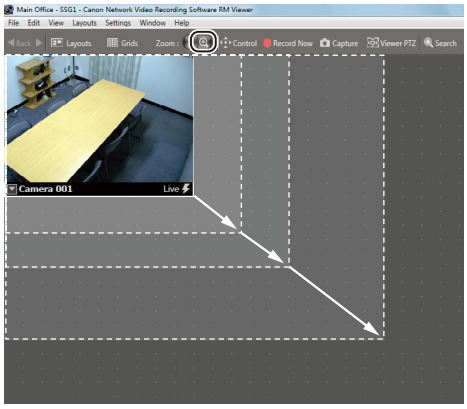
- You can play recordings from more than one camera at the same time.
- You can display recordings from one camera in multiple video windows. You can also play video recorded at different times simultaneously.
- Click [Live] on the timeline toolbar during playback to return to the live video.

Zoom the Viewing Area In and Out

You can zoom the video window in and out in four levels.

1 On the toolbar, click [+] next to [Zoom].

Each click zooms further in on the viewing area.



2 Click [-] to zoom out.

Each click zooms further out of the viewing area.

Important

The quality of the video in the video window decreases when you zoom in. To increase the video quality, increase the resolution (p. 67).

Note

- Select [Actual Size] from the [View] menu to return the view to the actual size.
- You cannot zoom out further than the actual size.

Zoom a Region of the Video (Viewer PTZ)

You can zoom a region of the camera video in the video window using Viewer PTZ (pan/tilt/zoom).
When the camera is fixed in position, you can use this function to control PTZ in the viewer to zoom in on a region of the video.
This function is available for live video and for recorded video during playback.

■ Start Viewer PTZ

1 Click [Viewer PTZ] on the toolbar or on the camera control panel.

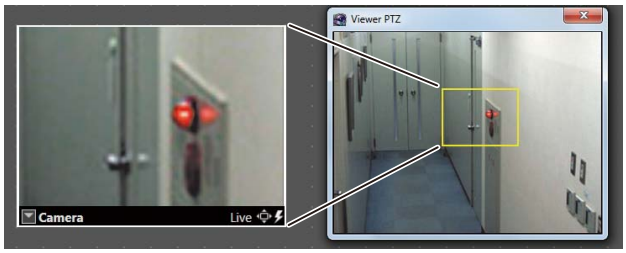
The Viewer PTZ panel appears.

2 Click the video window in which to use Viewer PTZ.

A white frame appears around the selected video window.

3 Specify the region you want to zoom by clicking or dragging in the Viewer PTZ panel.

A preview frame (yellow) appears around the specified region, and the video within the frame is zoomed in and displayed in the video window.
When the video is displayed zoomed in, a zoom icon appears in the bottom right corner of the video window.



4 If also using Viewer PTZ in other video windows, repeat steps 2 and 3 for each window.

Note

- Viewer PTZ uses the digital zoom function, hence the quality of the video decreases as the zoom ratio increases.
- Saving a snapshot image of the recorded video saves a snapshot of the whole video, not the zoomed in region.
- Viewer PTZ can be used in up to five video windows simultaneously. Using Viewer PTZ in additional windows after reaching this limit will cause Viewer PTZ to be released from other windows in sequence from oldest to most recent, according to the PTZ history.

■ Change the Size of the Preview Frame

You can change the size of the preview frame by dragging the preview frame lines.

Note

The preview frame has the same aspect ratio as the selected video window.

■ Move the Preview Frame

You can move the preview frame to any position within the video window.

Move by dragging

Click within the preview frame and then drag the frame, placing it over the subject you want to display zoomed in.

Move by clicking

Click outside the preview frame, on the subject you wish to display zoomed in, to move the center of the frame to that position.

■ Exit Viewer PTZ

Double-click anywhere within the Viewer PTZ panel.
The preview frame is cleared, and the display returns to the original video.
To exit Viewer PTZ from all video windows at the same time, right-click the Viewer PTZ panel and select [End Viewer PTZ (all video windows)].

Note

Even when the Viewer PTZ panel closes, Viewer PTZ operation continues.

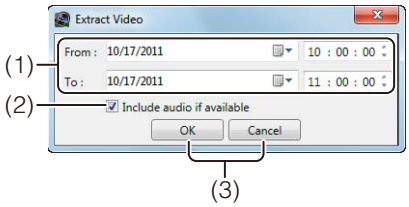
Save Part of a Recording

You can save a part of a recording with a length of up to one hour to a file.

1 Select a recording on the timeline.

2 Click [Extract] on the timeline to display the [Extract Video] dialog box.

3 Specify the time range for the video to be extracted.



(1) [From] and [To]
Specify the date and time of the start and end positions.

(2) [Include audio if available] check box
Clear the check box if you do not want to include audio in the file.

(3) [OK] and [Cancel]
Close the dialog box.

4 Click [OK].

The [Save As] dialog box appears.

5 Specify the file name and storage location and click [Save].

Important

- You can extract a video from only one video window at a time.
- Do not specify the Windows folder or the Program Files folder on the system drive as the destination. Video cannot be saved to these folders.
- You cannot save only audio data.
- When extracting a time range that contains different video formats (such as JPEG and H.264), divide the range by format and save each video segment individually.
- When the data size of video being extracted reaches 2 GB, extraction will stop and the video extracted to that point will be saved, even if the specified end time has not been reached.
  Play back the .mov file to check if the specified length of video was saved.
  When data size is expected to exceed 2 GB, divide the extraction time range. Refer to “Data Size and Bit Rate Estimates” (p. 26), and calculate the estimated data size.
  – Calculating time in minutes to 2 GB (JPEG)
    2,097,152 KB/(data size per frame (KB) x recording frame rate (fps) x 60 sec.)
  – Calculating time in minutes to 2 GB (H.264/MPEG-4)
    2,097,152 KB x 8/(bit rate (Mbps) x 1024 x 60 sec.)
  Specify the video extraction time range so it is within the calculated time estimation.
- Block noise may appear when a video recorded in H.264 and saved in .mov format is paused during playback using QuickTime.
- Initially, noise may be present when playing back extracted video recordings that include audio.

Note

Extracted video is saved in QuickTime movies (with the .mov file extension) and can be played with QuickTime (or other players that support the .mov file type). We recommend that you use QuickTime Version 6.5.1 or later.

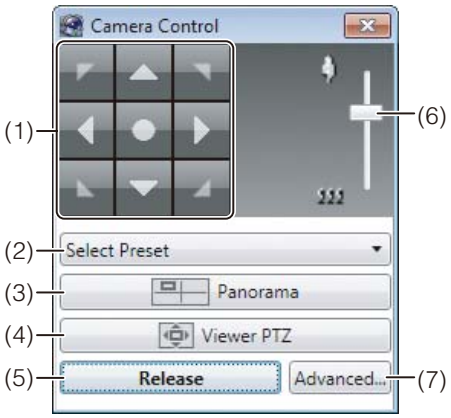
Operate the Camera

You can change the camera angle or adjust the video quality for a camera in the video window.

Get Control of a Camera

1 Click the video window.

2 Click [Window] > [Camera Control] to display the [Camera Control] dialog box.



(1) Camera angle control buttons
Change the camera angle.

(2) [Select Preset]
Moves the camera to a preset position.

(3) [Panorama]
Displays the [Panorama] window. Move the camera to a position using the panorama image.

(4) [Viewer PTZ]
Displays a region of the camera video, zoomed in to fill the video window. For details, see “Zoom a Region of the Video (Viewer PTZ)” (p. 103).

(5) [Control]/[Release]
Get or release control of the camera.

(6) Zoom slider
Drag to change the zoom position. Drag up to move toward the telephoto position and down to move toward the wide-angle position.

(7) [Advanced]
Configure the camera’s advanced settings.

3 Click [Control].

You now have control of the camera for a certain period.

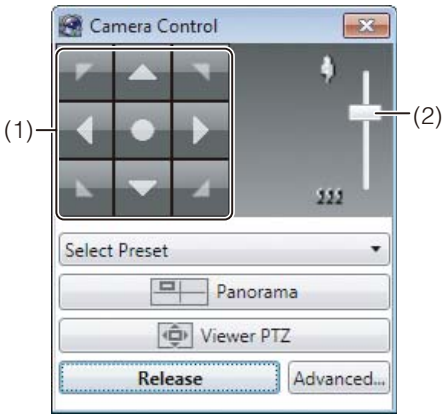
Note

- If the camera is idle for one minute, camera control is released automatically. A count down message is displayed 10 seconds before the release. If you want to keep control of the camera, operate the camera or click [Advanced] before the countdown ends.
- If you want to move the video window while you are in control of the camera, drag the title bar.
- You can also control the camera while recording. If the camera angle to be used during recording has been set, the camera returns to the set position when the Viewer releases camera control.

Use the Pan/Tilt/Zoom Feature

■ Use the Pan/Tilt/Zoom Feature in the [Camera Control] Dialog Box

You can use the pan/tilt/zoom feature in the [Camera Control] dialog box after getting control of the camera.



(1) Camera angle control buttons
Change the camera angle by clicking the buttons. Click in the center to point the camera to the front.

(2) Zoom slider
Drag the slider to change the zoom position. Drag the slider up to move toward the telephoto position and down to move toward the wide-angle position.

■ Use Pan/Tilt/Zoom from the Video Window

You can also use the pan/tilt/zoom feature from the video window.

(1) Display area
Drag on the area to change the camera angle. Click on the area to move the camera angle to that point. If the view does not center on the desired location the first time, keep clicking the location until it centers.

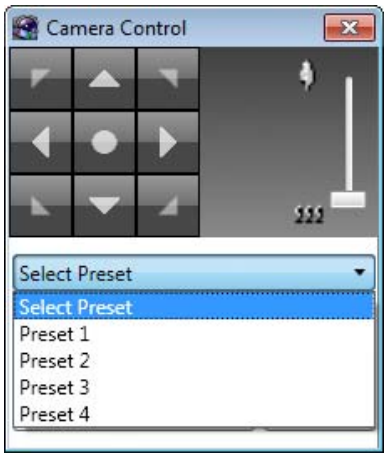
(2) Zoom slider
Change the zoom position using the slider or [+]/[-]. Click [+] or drag the slider up to move toward the telephoto position. Click [-] or drag the slider down to move toward the wide-angle position.

C500
Zoom is unavailable when the camera's digital zoom is set to [Disable].

C50F C50i
Pan/tilt/zoom is unavailable if a fixed camera or an external camera, such as the VC-C50i, is used.

Change the Camera Angle to a Preset Position

You can select a preset camera angle in the [Camera Control] dialog box after getting control of a camera.



S80x S90x H630 H610 H730 H710
[Select Preset] is unavailable.

Note

You must first configure the presets on the camera before using this feature. For details, see the camera manual.

Change the Camera Angle Using a Panorama Image

Change the camera angle by specifying a position on a panorama image.

1 Click [Panorama] in the [Camera Control] dialog box to display the [Panorama] window.

2 Change the camera angle and zoom using the frame displayed on the panorama image.

The frame is yellow when you have control of the camera. Drag the frame to change its size and zoom the camera in/out.
Drag the center of the frame to move the frame and change the camera angle.
If you draw a rectangle anywhere on the panorama image, the frame is redrawn at that location and the camera angle and zoom change correspondingly.
The frame is blue when you do not have control of the camera.

S80x S90x H630 H610 H730 H710 M620 M600 M720 M700 C500 C50F
[Panorama] is unavailable.

Note

You must first register a panorama image on the camera before using this feature. For details, see the camera manual.

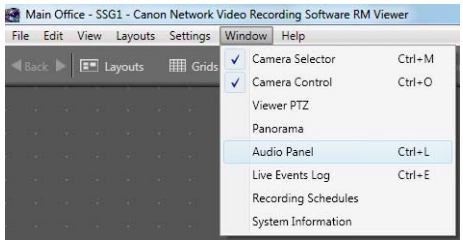
Play Back Audio

If the audio feature on the camera is used, you can play audio using the audio panel or send audio using a microphone.

Important

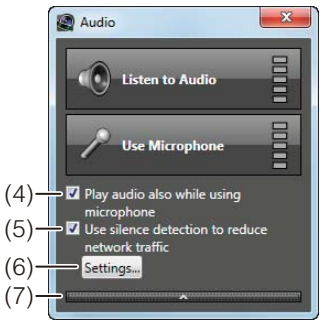
- You cannot send and receive audio from multiple Viewers simultaneously.
- The sending and receiving of audio is set to 10 minutes by default. The set time can be modified in [Viewer Settings]. For details, see “Configure the Viewer Display and Operation Settings” (p. 63).

1 Click [Window] > [Audio Panel].



The [Audio] panel appears.

Options view



(1) [Listen to Audio]
Starts audio playback.

(2) [Use Microphone]
Starts audio transmission.

(3) Show options button
Displays the options for the [Audio] panel.

(4) [Play audio also while using microphone]
Select if you want to play audio even when using a microphone.

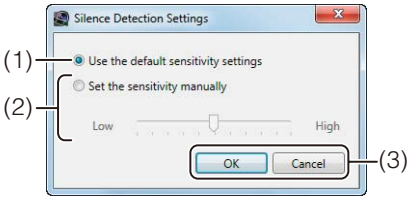
(5) [Use silence detection to reduce network traffic]
Select if you want to detect silent segments when sending audio. Decreases the amount of data transmitted during silent segments to decrease the load on network bandwidth.

(6) [Settings]
Displays the [Silence Detection Settings] dialog box.

(7) Hide options button
Hides the options of the [Audio] panel.

■ Silence Detection Settings

Select the [Use silence detection to reduce network traffic] check box on the [Audio] panel to set the silence detection sensitivity.
Click [Settings] to display the [Silence Detection Settings] dialog box and adjust the silence detection sensitivity.



(1) [Use the default sensitivity settings]
Uses the default sensitivity for silence detection.

(2) [Set the sensitivity manually]
Drag the slider to set the detection sensitivity.

(3) [OK] and [Cancel]
Close the dialog box.

Compensate for Dark Regions in the Video

Use the viewer shade control to compensate for any dark regions in the video.

1 Click the video window menu button to display the menu.

2 Click [Viewer Shade Control] and select the amount of shade from the submenu.

- [Off]
  Disable the shade control.
- [Low]/[Medium]/[High]/[Very High]
  Enable the shade control. View the video window and select a compensation value that gives the appropriate brightness.

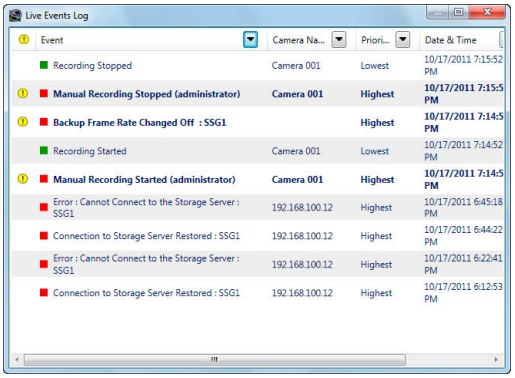
Note

- You cannot apply this feature to more than one video window.
- The viewer shade control is a feature of the Viewer, not the camera. Therefore, it can be used for both live and recorded video playback.

Check Events

View a Live Event

You can display past events in the [Live Events Log] window.



When the Viewer starts, you can open the [Live Events Log] window to show all events that occurred within the last hour. The top row in the list shows item names. You can sort events in the list by clicking ▾ in a column to specify the item to sort by and the sorting order.

Important

A maximum of 200 events can be displayed in the [Live Events Log] window.

Note

- Click [Window] > [Live Events Log] to display the [Live Events Log] window
- You can change the display priority for the [Live Events Log] window. For details, see “Configure Event Notification and Priorities” (p. 64).

■ Event Icon Colors

Different colored icons are displayed for events, depending on the priority.

Icon color	Priority
Red	Highest
Orange	High
Yellow	Medium
Light Green	Low
Green	Lowest

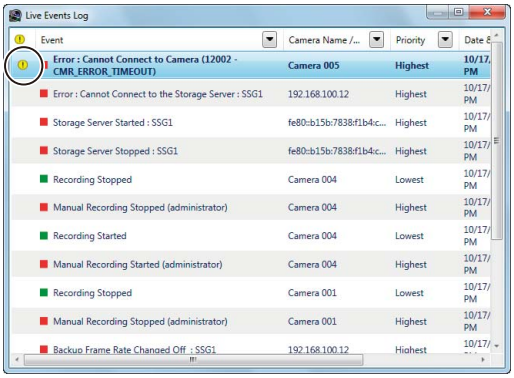
Note

- You can change the event priority.
- Motion detection recording, sensor detection recording, intelligent function recording, and volume detection recording priorities can be specified when setting the recording mode of a recording schedule. (pp. 83, 84)
- Other event priorities can be specified when setting the Storage Server Group. (p. 48)

■ Acknowledging an Event

RM-64/25/9

By default, when a [Highest] priority event is displayed in the [Live Events Log] window, an icon is displayed indicating that you should acknowledge the event.



The event will blink until you acknowledge it. Follow these steps to acknowledge the event.

1 Click the event to be acknowledged in the [Live Events Log] window.

2 Click [Edit] > [Acknowledge Event].

Important

If [Show Video Window on Event] is enabled in [Viewer Settings], the corresponding video window is brought to the front automatically. The size of the video window is always [320x240] pixels.

Note

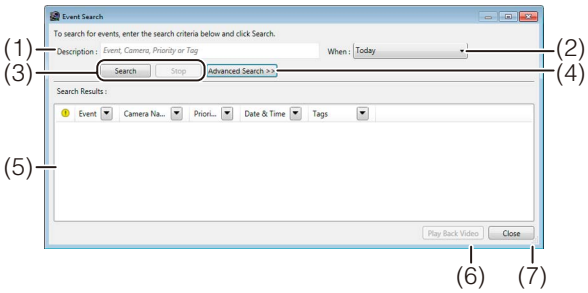
You can disable event acknowledgement in [Viewer Settings]. You can also change the priority of events that need to be acknowledged. For details, see “Configure Event Notification and Priorities” (p. 64).

Search for Events

You can search past events and play back the event.

1 Click [Search] on the toolbar to display the [Event Search] dialog box.

2 Specify the search criteria.



(1) [Description]
Enter the search criteria (event, camera, priority, camera tag, or host name).

(2) [When]
Specify the period in which the target event occurred ([Today], [Last 2 Days], [This Week], [This Month], [This Year], and [All Dates]).

(3) [Search] and [Stop]
Start searching or stop a search in progress using these buttons.

(4) [Advanced Search]
Click to specify detailed search criteria.

(5) [Search Results]
Displays the search results.

(6) [Play Back Video]
Plays back the recording associated with the search results.

(7) [Close]
Close this panel.

3 Click [Search] to start searching.

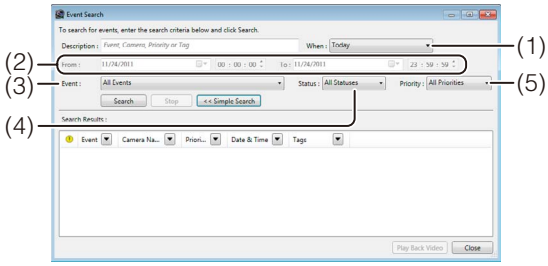
Note

To display the [Event Search] dialog box when the toolbar is hidden, click [Search] on the timeline or click [Edit] > [Event Search].

■ Advanced Search

RM-64/25/9

Click [Advanced Search] in the [Event Search] dialog box to specify detailed search criteria.



(1) [When]
Select [Specify Date Range] to specify the search period.

(2) [From] and [To]
Select [Specify Date Range] in [When] to specify the start and end times and dates for the search period.

(3) [Event]
Select the type of events to be searched.

(4) [Status]
Specify the status of the events ([All Statuses], [On], [Off]).

(5) [Priority]
Specify the priority of the events to be searched.

■ Play Back an Event

If a recording is associated with an event in the search results, right-click the event and click [Play Back Video] to play back the recording in the video window of the corresponding camera.
If the video window is not displayed, clicking [Play Back Video] will automatically display the window and start playback.

Important

When a dynamic layout is displayed, the video window is not automatically displayed.

Note

Click [Live] in the timeline toolbar after playing in the video window to display the live view.

Chapter 7

Operation and Management

- ❏ Error and warning level events
- ❏ How to check the status of the Storage Server
- ❏ Disk space management

Storage Server Health Check

Events Indicating Errors or Warning Levels and Corresponding Actions

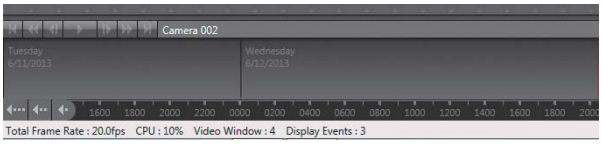
You can check events to determine if errors related to the Storage Server status have occurred.
When an event indicating an error or a warning level occurs, it is immediately displayed in the event panel or timeline. Take the appropriate action for the event.

Event Type	Message	Event Explanation	Corresponding Action
Low disk space notification*1	Warning: Low disk space	Occurs when the free disk space becomes less than the specified value, or the disk usage becomes greater than the specified value. Data may be deleted before the specified number of storage days has elapsed.	Check the recording mode settings (p. 82)
Starts/stops file deletion due to low disk space *1	Warning: Files deleted due to low disk space	Occurs when the free disk space becomes less than the threshold, or the disk usage becomes greater than the threshold.	
Pauses/resumes recording due to low disk space *1	Recording Suspended (Low Disk Space (<drive name>)	Occurs when the free disk space becomes less than the limit level, or the disk usage becomes greater than the limit level.	
Error connecting to the camera	Error: Cannot Connect to Camera	Occurs on an error when connecting to the camera.	Check the network status.
Error connecting to the Storage Server	Error: Cannot Connect to the Storage Server	Occurs on an error when connecting to the Storage Server registered with the Storage Server Group.	Check the network status.
Error connecting to the Storage Server Group	Error: Cannot Connect to the Storage Server Group	Occurs on an error when connecting to the Storage Server Group.	Check the network status.
Change in the recording frame rate	Recording Frame Rate reduced at high load issues	Indicates that the recording frame rate has been changed due to increased server load.	Check the recording mode settings (p. 82).

*1 See “Disk Space Management (Important)” (p. 114).

Status Bar

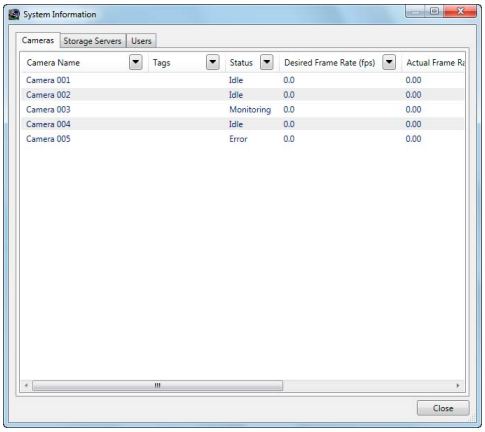
The status bar displays the Viewer processing status and load. You can check CPU usage to determine the load on your computer.
If the status bar is not displayed, you can display it by clicking [View] > [Status Bar].



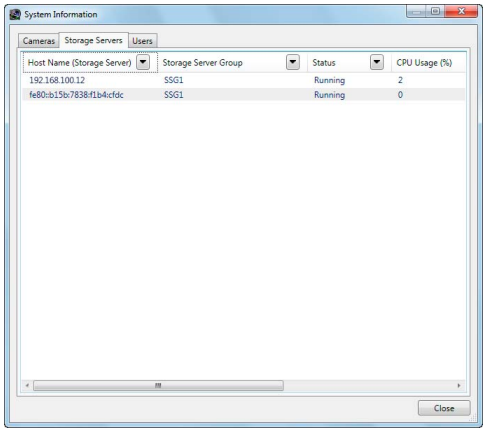
System Information

To get the detailed video processing status of the Storage Server, click [Window] > [System Information] to display the [System Information] dialog box. If system operation is unstable or you are not able to record in the way you intended to, refer to Chapter 1 and reconsider the system configuration.
The [System Information] dialog box shows the status on three different tabs.

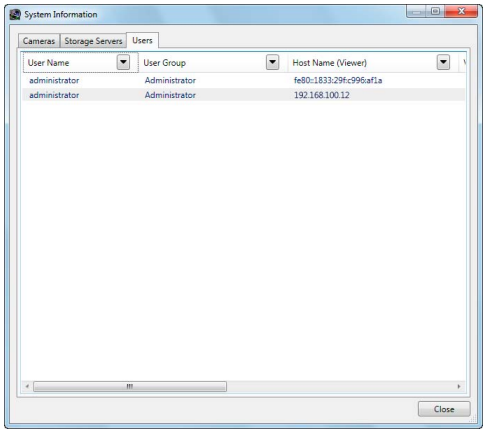
[Cameras] tab
This tab displays recording settings and processing information (camera tag, status, specified frame rate, actual frame rate, receiving bit rate, and recording bit rate) on the registered cameras.



[Storage Servers] tab
This tab displays information (Storage Server Group name, status, CPU usage, recording bit rate, and playback bit rate) on the registered Storage Server.



[Users] tab
This tab displays the users logged into the Viewer and related information (user group, host name (Viewer), Viewer version, host name (Storage Server), Storage Server Group Status).



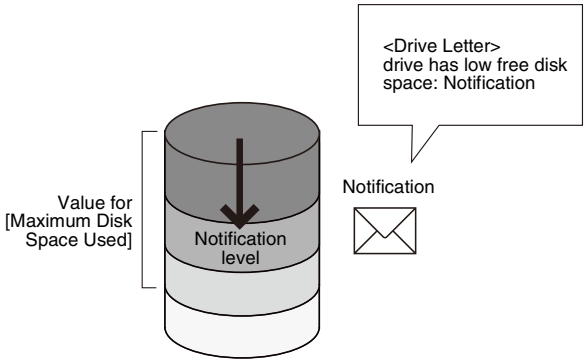
Disk Space Management (Important)

The Storage Server monitors the disk space and responds according to the amount of available space.

Disk Space Status	Explanation
Low remaining disk space notification level	You can specify a reference value using [Low Disk Space Warning Level] on the [Recording Settings] tab in the [Storage Server Group Settings] dialog box.
Threshold level	The Storage Server calculates a reference value based on various conditions and settings.
Limit level	

■ Action When the Low Remaining Disk Space Notification Level is Reached

The Storage Server issues an event when the disk space available for recording (i.e. available space relative to the maximum disk space used) goes below a certain level. If [Maximum Disk Space Used] is not set, the drive capacity of the disk that stores the recording file is considered to be the maximum disk space.



Important

An event e-mail notification is sent when the priority level of [Low Disk Space Warning] in the [Events] tab of the [Storage Server Group Settings] dialog box meets or exceeds the level specified in the e-mail notification settings. (p. 48).

Note

On receiving an event e-mail notification, an administrator can act promptly (for example, by removing unnecessary recording schedules) before a problem occurs due to low disk space.

Low Remaining Disk Space Notification Level Conditions and Calculation Method

If one of the following conditions is met, a low remaining disk space notification level is indicated.

Condition 1: If the Storage Server disk space usage exceeds the following values:
M x (100 - A)/100
(M: Value specified in [Maximum Disk Space Used], A: Value specified in [Low Disk Space Warning Level])
For example, if the value for [Maximum Disk Space Used] is 100 GB and the value for [Low Disk Space Warning Level] is 10%, the Storage Server reaches the low remaining disk space notification level when the Storage Server disk space usage becomes 90 GB or more.

Condition 2: If the free disk space falls below the following values:
Disk space x A/100
(A: Value specified in [Low Disk Space Warning Level])
For example, if the disk space is 80 GB and the value for [Low Disk Space Warning Level] is 10%, the Storage Server reaches the low remaining disk space notification level when the remaining free disk space becomes 8 GB or less.

Note

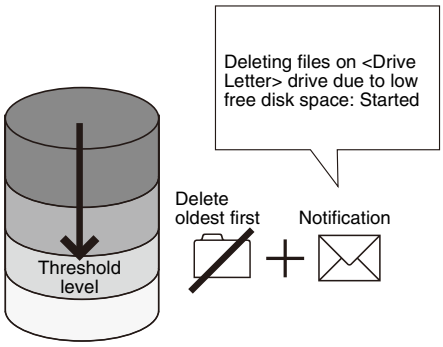
If other applications use the same hard disk, you need to consider condition 2. Even if the Storage Server uses a small amount of disk space, it may reach the low remaining disk space notification level according to condition 2 because other applications have consumed a portion of the disk space.

Calculation Example

Disk Drive	D Drive	E Drive
Disk Space	100 GB	200 GB
Free Disk Space	50 GB	200 GB
Value for [Maximum Disk Space Used]	40 GB	200 GB
Value for Low Remaining Disk Space Notification Level	Condition 1: 40 GB x (100-10)/100 = 36 GB Condition 2: 100 GB x 10/100 = 10 GB	Condition 1: 200 GB x (100-10)/100 = 180 GB Condition 2: 200 GB x 10/100 = 20 GB

■ Action When the Threshold Level is Reached

Recording continues, however, the Storage Server starts deleting recording files, beginning with old files, and issues an event.



Note

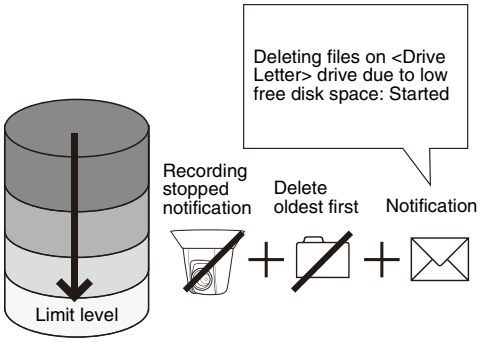
- Recording files are deleted, even if they have not reached the [Maximum Storage Period]. However, if the oldest file is currently in use by the Viewer (for example, for playback of recorded video), it will not be deleted and the next oldest file will be deleted instead. Deletion continues sequentially until the free disk space meets or exceeds the threshold again. For details on saving files, see Chapter 8.
- Normally, a recording file for which the minimum storage period has not elapsed is excluded from deletion. Note that such files are also deleted if the free disk space cannot meet and exceed the threshold value by deleting all the other files.

Threshold Level Conditions and Calculation Method

The threshold level is considered reached when the amount of free disk space drops below the following level.
(Number of cameras + 1) x 64 MB

■ Action When the Limit Level is Reached

The Storage Server stops recording and issues an event when the free disk space drops to this level.
The Storage Server resumes recording and issues an event when the free disk space increases above this level after deleting recording files.



Limit Level Conditions and Calculation Method

The limit level is considered reached when the amount of free disk space drops below 64 MB. This value is fixed.

Important

- The threshold level is to protect against reaching the limit level. We recommend that you take appropriate measures, such as deleting unnecessary recording data, when the event for the low remaining disk space notification level occurs.
- Storing recordings that cause the threshold level to be exceeded increases the load on the Storage Server and may cause recording to be interrupted, resulting in incomplete recordings. We strongly recommend that you operate the Storage Server at below the threshold level.
- If e-mail notification is specified, an e-mail message is sent for the event that occurs at each level (p. 48).
- Note that the threshold level conditions may be met before the low remaining disk space notification level conditions are satisfied, depending on the circumstances. For example, a large number of cameras with limited disk capacity may cause a value for (Numbers of cameras +1) x 64 MB to be larger than the value of disk capacity x low free disk space notification setting/100.

Chapter 8

Backup

- ❏ Types of backup target files and their destinations
- ❏ Restoring a recording file

Backing up data

Destinations of the Backup Files

The data that is saved during a backup consists of recording data, event data, and configuration files. The data is backed up from the Storage Server and saved to the folders described below, on the drives that are specified in the drive settings (p. 52).

■ Recording Data

<Destination drive>:\Canon-NVR\videofiles
The following recording data file is backed up:

NVR3_MEDIA_ xxxxxxxx _ yyyymmdd _ hhmmss .edt

xxxxxxxx	yyyymmdd	hhmmss
Camera ID	Year, month and day when recording started	Time

Video being recorded is saved to a temporary file on the hard disk. By default, a recording file is created and saved on the destination drive when the temporary file size reaches 1 GB or when 24 hours have elapsed since the start of recording. This size can be changed using the [Maximum File Size/Duration] option on the [Recording Settings] tab in the [Storage Server Group Settings] dialog box (p. 47).

Note

- Greenwich Mean Time is used for the time added to the file name of the recording data.
- This software uses lossy compression for the recording data. You do not need to compress the recording files further using a tape drive or other devices.

Temporary Files

The following is a temporary file, before it is made into a recording data file by the system. This file cannot be backed up using the standard backup method.

NVR3_UNINDEXED_MEDIA_xxxxxxxx_ yyyymmdd _hhmmss.edt

xxxxxxxx	yyyymmdd	hhmmss
Camera ID	Year, month and day when recording started	Time

■ Event Data

<Destination drive>:\Canon-NVR\eventfiles
The following event data file is backed up:

NVR3_EVENT_ xxxxxxxx _ yyyymmdd _hhmmss .evt

xxxxxxxx	yyyymmdd	hhmmss
Camera ID	Year, month and day when recording started	Time

Note

Greenwich Mean Time is used for the time added to the file name of the recording data.

■ Configuration Files

The settings for the Storage Server and the Viewer are saved in the following folders on the computer where the program is installed. You must back up all of these folders to completely back up the configuration files.

Configuration file path
<System drive>:\ProgramData\Canon\WebView\NVR30\
<System drive>:\Users\<user name>\AppData\Local\Canon\WebView\NVR30\

Note

- The configuration file names are not displayed unless [Show hidden files and folders] is selected in the [View] tab of Windows Explorer [Folder Options].
- You cannot use the shadow backup feature.

Notes on Backup

- You do not need to stop recording to back up recorded data that is complete. However, the frame rate may change because of increased disk I/O load and/or CPU load.
- If you want to restore a backed-up recording file, the computer you restore the backup to must have the same IP address and drive configuration as the original Storage Server. For example, if the original Storage Server includes a system drive and a recorded data drive, the Storage Server you restore the backup to must also have a system drive and a recorded data drive. Determine the hard disk capacity based on the volume of data to be restored.

How to Restore a Backup

Restoring from Backup Data

Use the following procedure to restore a Storage Server from backup data:

1 Prepare a new Storage Server for the restore.

2 Install this software.

3 Stop the Storage Server.

See “Stopping the Storage Server”(p. 119) for details on how to stop the Storage Server.

4 Restore the configuration file for this software to its original location.

The following folder is used by default:
Configuration file path
<System drive>:\ProgramData\Canon\WebView\NVR30\
<System drive>:\Users\<user name>\AppData\Local\Canon\WebView\NVR30\

5 Restore the recording files to their original location.

The following folder is used by default:
<Destination drive>:\Canon-NVR\videofiles\

6 Restore the event files to their original location.

The following folder is used by default:
<Destination drive>:\Canon-NVR\eventfiles\

7 Start the Storage Server.

8 Make sure that recording is performed correctly. Also make sure that the restored recording data plays back correctly.

Important

If the [Ensure video is kept for upto] option is set on the [Servers] tab in the [Settings] dialog box, any restored recording data that exceeds the specified storage period will be deleted when the Storage Server starts.

■ Stopping the Storage Server

The Storage Server runs in the background as a Windows service. When you restore backup data, you must follow the following steps to temporarily stop the Storage Server.

1 Click [Start] > [Control Panel].

2 Click [System and Security].

3 Click [Administrative Tools].

4 Double-click [Services].

5 Double-click [RM Storage Server] to display [RM Storage Server Properties].

Lite Double-click [RM-Lite Storage Server].

6 Click [Stop].

7 Click [OK] to close the properties.

Note

To restart the Storage Server, follow the same steps and click [Start] in step 6.

Chapter 9

Troubleshooting

- ❏ Actions required when recording errors occur
- ❏ Solutions when Viewer problems occur
- ❏ Error messages

Actions Required When Recording Errors Occur

When a recording error occurs (e.g., data is missing) during playback, you can troubleshoot the cause by checking the information in the event log and the Storage Server log file.

Log		Cause	Action
Event	Storage Server		
Error: Cannot Connect to Camera	CameraServer <host name> disconnected(<error information>)	A network error may have occurred. Look for the cause of the error by checking the Winsock error code recorded in the Storage Server log (p. 130).	Check the network (hub, cables, etc.) for any problems and make sure that the camera is operating normally.
Recording Frame Rate reduced due to high load issues	—	• The effective recording rate is excessively low (50% or lower). • Sensor and motion detection events may have been issued too frequently. • The load on the Storage Server CPU may be high.	• Modify the recording schedule and the motion detection sensitivity. • Check the current CPU usage and terminate any applications that are a heavy load on the CPU.
Recording Suspended (Low Disk Space (<drive name>))	—	The load from writing recorded data to the hard disk may be too high.	Shorten the maximum storage period or consider adding a hard disk. Additionally, try to modify the recording schedule.

Solutions When Viewer Problems Occur

If you encounter problems when you use the Viewer, refer to the following solutions:

Viewer and Video windows

Problem	Solution
I cannot use the pan, tilt or zoom feature of the camera in the video window.	• Double-click the video window or click [Control] on the [Camera Control] panel (p. 105). • If video is being played (the title bar of the video window is gray), you cannot operate the camera. Click [Live] on the timeline and get control of the camera.
When I click a video window to display the [Video Window] menu, [Record Now] is gray (unavailable). But, I can use the feature in another video window.	Display [<camera name> Properties] for the video window and check on the [Advanced] tab whether the camera is disabled. If the camera is disabled, click [Enable Camera]. (p. 55).
When I try to use layouts created by other users, the [Layout] menu is not displayed. I cannot select a layout.	Layouts saved in the [User Layouts] folder cannot be seen by other users. To allow all users to access layouts created by a user, the layouts must be created by a user with administrator permissions and must be saved in the [Shared Layouts] folder (p. 71).
The quality of video (live and recorded) in the video window is low.	Change the receive size and display size settings. Depending on the receive size and display size, the video quality may decrease. For example, if video with a low receive size is displayed on a large video window, the video quality will decrease. You can adjust the quality for recorded video with the advanced recording settings.
None of the cameras will record.	• Is the network cable for the server properly connected? • Has there been a power failure? • Is “Do not Record” specified for a special day schedule? • If link lamps on the hub (switching hub) and on the network connector on the server do not light, there may be a defect in the server’s cable, hub (switch), or network connector.

Problem	Solution
Some cameras do not record.	• Is the power and the network connection for the cameras working? • Do the cameras reply to a ping? • Can you view live video on the camera's Viewer on the Storage Server computer? • Is "Do not Record" specified for a special day schedule? • Is sensor recording or motion detection recording set?
I cannot connect to the Storage Server from the Viewer.	• Are the login user name and password correct? • Is the network connection between the server and the Viewer working? • Is the IP address of the destination server correct? • Does the server reply to a ping from the Viewer computer? • Is TCP port 80 being used by another application?
I cannot view live video.	• If "Could not connect to camera" is displayed in the video window, check the camera's power supply and network connection. • If a message is displayed in the timeline of the Viewer indicating that an error occurred when connecting to the camera, check the camera's power supply and network connection. • If the screen goes blank when the layout is switched, but a video is displayed after a few seconds, the number of cameras or the live frame rate setting exceeds the performance capabilities of your computer. Reduce the number of cameras, or decrease the frame rate. • In the H.264 or MPEG-4 video format, this may happen because there is not enough memory. Reduce the number of open video windows or change the video format to JPEG.
The Storage Server slows down or it takes longer to perform various configuration changes, such as registering cameras or recording schedules from the Viewer (for Windows Vista).	• Make sure that less than 10 cameras are registered on each Storage Server. • If the Storage Server is running Windows Vista, use Windows Server 2008 instead.
Live video is no longer displayed from any camera (for Windows Vista).	• Make sure that less than 10 cameras are connected to one Viewer. • If you are using the layout sequence feature, set the interval to 20 seconds or longer. • If the Storage Server is running on Windows Vista, switch to Windows Server 2008.
When the layout sequence feature is used, the video windows suddenly go blank and the video from the cameras can no longer be displayed.	When you use the layout sequence feature to switch quickly to a layout where there are a large number of video windows, the communication resources of the system may become insufficient. Reduce the number of cameras in a layout, or make the display interval for the layout sequence longer.
The Viewer slows down.	• The performance of the Viewer depends largely on the specification of your CPU and graphics card. When the Viewer seems to slow down, try to reduce the number of cameras in the Viewer or decrease the frame rate. • If the video size or quality setting for the cameras is high, the large amount of video data may cause processing to take longer. Try adjusting the video quality and video size settings on the camera.

Timeline

Problem	Solution
Nothing happens when I click any of the playback controls.	• Move the playhead off of the [Live] position. • You must select a video window before you can play back video. In addition, the previous frame and next frame buttons (p. 102) and the [Extract] button (p. 104) are enabled only when one video window is selected.

[Extract Video]

Problem	Solution
I tried to save a recording, but an error message is displayed telling me that no video can be found in the selected timeline segment.	Make sure that a recorded video is included in the selected portion of the timeline (p. 101).

Recording

Problem	Solution
The [Record Now] feature cannot be used.	Make sure that the camera is not disabled on the [Advanced] tab in [<camera name> Properties]. If the camera is disabled, click [Enable Camera] (p. 55).
The amount of Storage Server disk space usage is much higher than the calculated level (pp. 25, 114) and free disk space is low.	When the video size or quality setting of the camera is high, the amount of data per frame is large. In addition, if you are using anti-virus software, the software records communication between the Storage Servers and the cameras and the size of that log may reach several gigabytes. Change the anti-virus software settings to exclude the Storage Servers from the target list.

Connection Problems

Problem	Solution
The screen goes blank and the “Cannot connect to camera” message is displayed.	A network error occurred, the camera was disconnected from the network, or the camera power was turned off.

Error Messages

Messages Displayed in the Viewer

■ Error Messages in the Video Window

	Message	Cause
Video window	Connecting to camera.	The Viewer is in the process of connecting to the camera.
	Cannot connect to camera.	The Viewer cannot connect to the camera and live video cannot be displayed.
	Getting camera control.	Displayed after the user tries to get camera control.
	Cannot get camera control.	Another user with higher priority is already controlling the camera when you try to get camera control.
	Control will be lost in <count down> seconds.	Displayed if the camera is idle for one minute; starts a countdown. The countdown starts at 10 and counts down one second at a time until it reaches zero.
	Camera control lost.	A timeout occurred while the Viewer was controlling the camera or another user with higher priority requested camera control. Displayed for three seconds.
	No recorded video.	Displayed when playing back a recording if there is no recorded video at the current playhead position.
	Cannot Connect to the Storage Server.	Displayed when you cannot connect to the Storage Server to play back a recording.
	Please wait.	Displayed when it may take some time to display an MPEG-4 or H.264 live/recorded video.
	Could not connect to send audio.	A connection for sending audio to the camera could not be established, so audio cannot be sent to the camera.
	Could not connect to receive audio.	A connection for receiving audio from the camera could not be established, so audio cannot be received from the camera.
	You do not have permission to view the live video.	The administrator has prohibited the display of live view.

■ Warning Messages in the Viewer

	Message	Cause
Viewer window	The time on this machine is out-of-sync with the time used by the storage server group. This causes problems with the display of events. To correct this problem, please synchronize the time of this machine to the server group.	There is a time difference of 5 seconds or longer between the Storage Server and the Viewer computer. Adjust the system time of the Viewer computer to the time of the Storage Server. This message is not displayed if the [Send notification when time is out-of-sync with the storage server group] checkbox is cleared in the [Viewer Settings] dialog box (p. 64).
Event notification	Invalid E-mail Address.	Characters other than alphanumeric characters and the underscore (_) were entered for the e-mail address.
	The SMTP server port is invalid. Please specify a value between 1 and 65535.	An invalid SMTP server port number was entered.
	The POP server port is invalid. Please specify a value between 1 and 65535.	An invalid POP server port number was entered.
User management	The user name already exists.	Tried adding a user to the Storage Server with a name that already exists.
	Unable to change the user name. The user '<user name>' already exists.	Tried adding a user name on the Storage Server to a name that already exists.
	Please ensure that the password and confirmation match exactly.	The password in the [Confirm Password] field does not match the user password.
	Are you sure you want to remove this user?	Tried to delete a user.
	The number of connecting viewers has exceeded the recommended number, and the recording server is under high load.	Tried connecting 7 or more Viewers at one time.
Configuration	The value for maximum must be greater than or equal to 1 day.	Tried to specify less than one day for the maximum storage period.
Adding a recording schedule	Streaming for recording is applied only when the following conditions are satisfied: – the video stream format is JPEG – the frame rate settings do not exceed 10 fps – there is no existing recording-mode stream in the camera.	Tried to enable a recording-mode stream.

■ Error Messages in the Viewer

	Message	Cause
Recording schedules	This schedule item overlaps a previously scheduled item. Please check your settings and try again.	Recording schedules overlap.
	Recording schedule items must be set at least 15 minutes long. Please check your settings and try again.	Tried to set a schedule with a period shorter than 15 minutes.
	Recording schedule items cannot be created for the following cameras because of a clash with existing schedules: <camera name>	Tried to drag a recording schedule window to add multiple recording schedules, but one camera has a conflicting schedule.
	Failed to create multiple recording schedule items. All selected cameras have recording schedule items that clash with a schedule time range.	Tried to add a recording schedule to multiple cameras using the [Edit Schedule Item] dialog box, but the schedule time range clashes with schedules that are already set on the cameras.
	At least one day must be selected. Please check your settings and try again.	[OK] was clicked without specifying the day of the week.
	At least one recording mode must be selected. Please check your settings and try again.	[OK] was clicked without selecting the check box for a recording mode.
	You cannot use digital zoom with “Current Camera Position”.	Tried to specify the digital zoom range and close the [Edit Schedule Item] dialog box with [Current Camera Position] selected.
Special day schedules	This schedule type has days set up for it to be used on. These need to be removed before deleting the schedule type.	Tried to delete the special day schedule that has scheduled days.
	This day has already been set as special day schedule '<schedule name>'. Do you want to delete the day from the special day schedule '<schedule name>' and use it in this schedule?	Tried to use dates that are already used for another special day schedule.
	Special day schedules cannot be set the end time which is earlier than the start time.	Tried to register a schedule that goes past 24:00.
	A schedule with this name already exists.	Tried to add a special day schedule with a name that already exists.
Viewer window	Communication with the SSG “<storage server group name>” has failed. To ensure that event and video data are available from this SSG, identify and resolve the problem and then press [OK] to reconnect to the SSG. If you press [Cancel], then some event data including all future events for cameras recording to this SSG will not be available.	A problem occurred when connecting to the Storage Server to display a Viewer window.
	Do you want to save changes to this layout?	Tried to close a layout that was modified.
	Cannot save it in this folder.	The Windows folder or the Program Files folder was specified as the destination folder for snapshots.
	This will replace an existing layout of the same name. Are you sure you want to continue?	Tried to save a layout sequence to a folder that contains a layout or a layout sequence with the same name.
	This layout cannot be saved using the same name as an open layout. Please try again using a different name.	Tried to save a layout using the same name as another layout that is open in another tab or window.
Adding and editing a camera	Could not connect to camera. Please verify that the host name, port number, user name and password are correct.	Could not connect to the camera.
	Are you sure you want to remove the camera '<camera name>'? If the camera is removed, you will not be able to play back recorded video.	Tried to delete a camera.

	Message	Cause
Saving the specified video	The length of the extracted video must not exceed 1 hour.	Tried to make the time longer than 1 hour.
	Unable to extract video. There is no video data in the specified timeframe.	Could not save video because there was no recorded video in the selected segment.
	Cannot save it in this folder.	The Windows folder or the Program Files folder was specified as the destination folder for a .mov file.
[Organize Layouts and Layout Sequences] dialog box	You cannot move the layout <layout name> because it is contained in the current layout sequence.	Tried to move a layout that is registered to the layout sequence currently in use.
	You cannot move the layout '<layout name>' because it is the current layout.	Tried to move the current layout.
	You cannot delete the layout <layout name> because it is the current layout.	Tried to delete the folder that contains the current layout or the current layout and layout sequence.
	Unable to change layout name. The name <layout name> already exists.	Tried to rename a layout using the same name as an existing layout.
	You cannot move the layout sequence <layout sequence name> because it is the current layout sequence.	Tried to move a layout that is registered to the layout sequence currently in use.
	You cannot delete '<layout name>' because it is used by the current layout sequence.	Tried to delete a layout that is part of the current layout sequence.
	You cannot delete the layout sequence '<layout sequence name>' because it is the current layout sequence.	Tried to delete the current layout sequence.
	You cannot move the folder <folder name> because it contains an open layout sequence.	Tried to move the folder that contains the layout sequence currently in use.
	You cannot move the folder <folder name> because it contains an open layout.	Tried to move the folder that contains the current layout.
	You cannot delete the folder <folder name> because it contains the current layout.	Tried to delete the folder that contains the current layout.
	Unable to create folder. The name <folder name> already exists.	Tried to create a new folder using the same name as an existing folder.
	Unable to change layout folder name. The <folder name> already exists.	Tried to rename a folder using the same name as an existing folder.
	You cannot move <folder name> folder because it contains layout <layout name> used by layout sequence <layout sequence name> which is open.	Tried to move a folder that contains a layout registered to the current layout sequence.
	You cannot delete <folder name> folder because it contains layout <layout name> used by layout sequence <layout sequence name> which is open.	Tried to delete a folder that contains a layout registered to the current layout sequence.

Messages Recorded in the Log Files

■ Log File Locations

The Storage Server log files are saved in the following folder on the computer where the server is installed.
<System drive>:\ProgramData\Canon\WebView\NVR30\Log\

Types of Log Files

File Name	Explanation
storage_server_log_0.csv	Log file for the Storage Server
viewer_log_0.csv	Log file for the Viewer

■ Error Message List

Messages shown below are recorded in the log file when an error occurs.

Message	Explanation
Cannot rename storage_server.cfg.tmp to storage_server.cfg file	A temporary file for the configuration file was found, but could not be renamed.
No configuration file found.	Could not find the Storage Server configuration file.
Cannot delete old config '<file name>', error code <win32 error>	Could not save the configuration.
Cannot rename config from '<temporary file>' to 'storage_server.cfg', error code <win32 error>	Could not save the configuration.
Cannot write to config '{storage server name}	Could not save the configuration.
Configuration file failed consistency check, exiting...	Inconsistency was found in the configuration file. This occurs when the configuration file is rewritten directly.
Error: Local machine not in the config.	Could not find the IP address or host name of the Storage Server in the configuration file.
Failed to bind to listen port {port number}	The Storage Server could not bind to the port.
Failed to setsockopt for conditional accept()	Could not apply a socket option to the socket for group communication.
LS_start_service(apache) failed.	Apache startup failed.
Email Authentication error (<reason>): <host>	An authentication error occurred while sending e-mail.
Email error: recipient is unreachable (<reason>): <host>	A transmission error occurred while sending e-mail.
Email error: server not responding (<reason>): <host>	Could not communicate with the SMTP host while sending e-mail.
Unable to obtain file size on disk, GetFileAttributesEx failed with error=%d for file %S	Could not determine the size of the media or event file.
CameraServer <host name> disconnected(<error information>)	Could not connect to the camera.

■ Error Codes

Winsock Error Codes

Code	Error Message	Possible Cause
10038	An operation was attempted on something that is not a socket.	This may occasionally occur. No action is required.
10048	Only one usage of each socket address (protocol/network address/port) is normally permitted.	All communication resources are in use. This error is frequently reported when a video can no longer be displayed in a Viewer layout sequence.
10050	A socket operation encountered a dead network.	Occurs when the computer recognizes that the network is down because the router or hub closest to the computer is powered off. Normally, this cannot be recognized, therefore this error is rarely reported.
10051	A socket operation was attempted to an unreachable network.	Occurs when other network devices recognize that the network is down because the router or hub is powered off. Normally, this cannot be recognized, therefore this error is rarely reported.
10054	An existing connection was forcibly closed by the remote host.	The connection was aborted by the camera due to a camera restart or other causes. This may occur when the camera is restarted using the restart button on the Setting Page provided by the camera software. However, this rarely occurs.
10060	A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.	A timeout occurred in the TCP connection with the camera. This occurs when the camera is powered off.
10061	No connection could be made because the target machine actively refused it.	The camera rejected the TCP connection. This occurs when the port number is incorrect or from another cause.
10064	A socket operation failed because the destination host was down.	Occurs when the camera is powered off. Normally, 10060 occurs.
10065	A socket operation was attempted to an unreachable host.	There is no route for connecting to the camera. This may also occur when there is a failure in the network cable connected to the computer or hub.
10091	WSAStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.	There is a failure on the computer's network adapter.
11001	No such host is known.	The host name could not be resolved in the DNS.
11004	The requested name is valid, but no data of the requested type was found.	The host name could not be resolved in the DNS.

SMTP Error Codes

Code	Error Message	Possible Cause
421	<domain> Service not available, closing transmission channel	The communication was terminated because the mail server was stopped.
450	Requested mail action not taken: mailbox unavailable	The requested mail processing was not performed because the mailbox is not available.
451	Requested action aborted: local error in processing	The requested operation was canceled because an error occurred in the mail server.
502	Command not implemented	The mail server does not support the command that was sent.
550	Requested action not taken: mailbox unavailable	The request was not executed because the mailbox is not available.

HTTP Error Codes

Code	Error Message	Possible Cause
401	Unauthorized	The user name and password for connecting to the camera is incorrect.
403	Forbidden	A connection cannot be established due to an IP address restriction on the camera. This may also be returned by a proxy server.
500	Internal Server Error	Occurs when the HTTP server is running but the Storage Server is not started. It may also occur during normal operation if the camera is restarted.
503	Service Unavailable	Occurs when the camera is temporarily unable to process requests due to server overload (excessive requests from multiple clients), or an uncompleted start-up process on the camera, or other reasons.

wininet Error Codes

Code	Error Message	Possible Cause
12002	The request has timed out.	A request timeout occurred. Indicates that the connection or request transmission failed.
12005	The URL is invalid.	The URL is incorrect. Normally, this does not occur, however, it may occur when an attempt is made to connect to an unsupported camera.
12007	The server name could not be resolved.	The host name could not be resolved. This error is generated when a host name that is not registered in the DNS is specified or when a problem occurred in communication with the DNS itself.
12017	The operation was canceled, usually because the handle on which the request was operating was closed before the operation completed.	The communication was canceled. This error does not indicate a problem and may be generated during normal operation.
12029	The attempt to connect to the server failed.	The connection to the camera failed. Normally 12002 is generated.
12030	The connection with the server has been terminated.	The connection to the camera has been aborted. The disconnect process itself is recorded when it executes normally.
12031	The connection with the server has been reset.	The connection to the camera has been reset.

POP Error Messages

Error Message	Possible Cause
ERR never heard of mailbox name	The e-mail address is incorrect.
ERR invalid password	The password is incorrect.
ERR unable to lock maildrop	The mailbox cannot be used. It is already in use by another program.

Event Information

Event Information	Displayed Message
Motion Detection	[Motion On] or [Motion Off]
Sensor Recording	[Sensor On] or [Sensor Off]
Record Now	[Manual Recording Started] or [Manual Recording Stopped]
Intelligent Function	[Intelligent Function On] or [Intelligent Function Off]
Volume Detection	[Volume Detection On] or [Volume Detection Off]
Recording	[Recording Started] or [Recording Stopped]
Change in the recording frame rate	[Recording Frame Rate reduced due to high load issues] or [Reverted to the Recording Frame Rate due to resolution of high load issues]
Low Disk Space Warning	[Warning: Files deleted due to low disk space]
Delete recorded files (when disk space is insufficient)	[Delete recorded files (when disk space is insufficient) started] or [Delete recorded files (when disk space is insufficient) stopped]
Delete recorded files (when disk space is low)	[Delete recorded files (when disk space is low) started] or [Delete recorded files (when disk space is low) stopped]
Suspending/Resuming Recording	[Recording Suspended] or [Fixed: Recording Resumed]
Camera Communications Error	[Error: Cannot Connect to Camera] or [Connection to Camera Fixed]
Storage Server Starting/Stopping	[Storage Server Started] or [Storage Server Stopped]

Appendix

- ❏ Creating a shortcut icon
- ❏ Camera maintenance
- ❏ Checking the version
- ❏ Limitations for MPEG-4 and H.264 formats
- ❏ Using AXIS models

Create a Shortcut Icon for Starting the Viewer

You can configure the way the Viewer starts up, for example, to have it bypass the login screen with the user name and password (pp. 45, 46) by creating a shortcut icon that specifies Viewer startup options.

Important

- You cannot reconfigure the shortcut icon that is automatically created on your desktop when you install this software.
- The login password can be easily viewed in the properties of the shortcut icon. Make sure to take sufficient security measures when using this feature.

1 Right-click [Viewer.exe] in the installation folder and click [Create shortcut].

[Viewer.exe] is located in the following folder by default:
<System drive>:\Program Files\Canon\WebView\NVR30

Note

- <System drive> corresponds to the drive containing the system files of the operating system. If the operating system is installed on the C drive, the system drive is the C drive.
- A message may appear asking whether or not you want to create a shortcut icon on the desktop. Click [OK] if you want to create the desktop icon.

2 Right-click the shortcut icon and select [Properties].

3 On the [Shortcut] tab, add a startup option to [Target].

Startup Options	Description
-group nvr://<username>:<password>@<storage server group name>	The information in the options is used to connect to the server group and start the Viewer, without displaying the [Connect to Storage Server Group] dialog box on startup.

4 Click [OK] to close the dialog box.

5 Move the shortcut icon to a location you prefer.

Changing the Storage Server IP Address

When the IP address of a computer that has a Storage Server installed on it changes, the IP address of the Storage Server must also be changed.

1 Select [RM Storage Server] from [Control Panel] > [System and Security] > [Administrative Tools] and stop the service.

2 Open the command prompt using [Run as administrator], enter the “storage_server.exe” command name and option (-resethost=“IP address”), and execute the command.

Example: 64-bit OS
“c:\Program Files (x86)\Canon\WebView\NVR30\storage_server.exe”-resethost=XXX.XXX.XXX.XXX
Example: 32-bit OS
“c:\Program Files\Canon\WebView\NVR30\storage_server.exe”-resethost=XXX.XXX.XXX.XXX

Enter the IP address the computer changed to for “XXX.XXX.XXX.XXX”.

3 Select [RM Storage Server] from [Control Panel] > [System and Security] > [Administrative Tools] and start the service again.

Lite

- To stop or start the service from the control panel, select [RM-Lite Storage Server].
- When executing the command, enter “storage_server_rm_lite.exe”.

Camera Maintenance

About the Latest Camera Firmware

You can find the latest firmware and configuration backup and restore tools for cameras that are supported by this program at the Canon Web site.

Update the Firmware

To update the firmware for your camera, you must use the tool that is specific to your camera model.

1. Download the latest firmware with the Firmware Upgrade Tool, and download the Backup Tool and Restore Tool.

2. Back up the camera configuration using the Backup Tool.

3. Update the firmware using the Firmware Upgrade Tool.

Note

If the firmware update fails, restore the configuration using the Restore Tool.

How to Check the Version

The steps below explain how to check the version of this software.

Checking the Version of the Viewer

1 Start the Viewer.

2 Click [Help] > [About].

3 Check the version of the software on the displayed dialog box.

Checking the Version of the Storage Server

1 Click the Start button > [Control Panel] > [Uninstall a program] or [Add or Remove Programs].

2 Check the version of the software in the displayed list.

Functional Limitations for MPEG-4 and H.264 formats

The VB-C60, VB-C500D, and VB-C500VD support MPEG-4 format, while the VB-S30D, VB-S31D, VB-S800D, VB-S900F, VB-S805D, VB-S905F, VB-H43, VB-H630VE, VB-H630D, VB-H730F, VB-H41, VB-H610VE, VB-H610D, VB-H710F, VB-M42, VB-M620VE, VB-M620D, VB-M720F, VBM40, VB-M600VE, VB-M600D, and VB-M700F support the H.264 format. Note that the following limitations apply.

Live View

- The following video window settings cannot be set, and the frame rate settings on the camera are enabled.
  - Maximum Frame Rate
  - Auto Adjust Frame Rate
- Synchronization of audio and video is not guaranteed.

Recording

- The frame rate settings on the camera are enabled.
- The [Reduce recording frame rate when disk is under high load] setting in the Storage Server Group Settings is disabled.
- The [Record Now] option only supports JPEG format. You cannot use this option to record video in MPEG-4 format or H.264 format.

Important

Only H.264(1) video can be displayed and recorded. The software does not support H.264(2) video, even if using a camera that does support H.264(2).

Playback

- You can perform the following operations. However, you cannot use [Fast Reverse], [Previous Frame], and [Next Frame].
  - Specify the playback time on the timeline
  - Start playback from the live event display window and the event search window
  - You can use [Pause], [Fast Forward], [Previous Event], and [Next Event]
- If you change the recording format of a recording schedule from MPEG-4 or H.264 to JPEG part of the way through the recording, then when you reverse the recording, the video disappears when you transition from the JPEG segment to the MPEG-4 or H.264 segment, and the “No Recorded Video” error message is displayed.
- Recordings in MPEG-4 and H.264 format recorded with this software can only be played back with this software. However, you can use [Extract Video] to save the recording as a .mov file and use QuickTime or other compatible software to play back the recording.

Using the AXIS Q7404/Q7401

For setting details for the AXIS Q7404/Q7401, see the user manuals and safety precaution manuals included with each product.

Supported Firmware

The following firmware is necessary when using the AXIS Q7404/Q7401.

Video Encoder	Firmware
AXIS Q7404	Ver.5.20
AXIS Q7401	Ver.5.20.3

Usage Precautions

- When registering the AXIS Q7404/Q7401 in RM-64/25/9, you must enter the host name, and the Administrator group account user name and password just as with other cameras.
- Register one AXIS Q7404/Q7401 at a time. You cannot search and register them.
- If the number of simultaneous accesses to the AXIS Q7404/Q7401 increases, it may affect the recording or live video frame rates. Be sure to test sufficiently before beginning operation.
- A maximum of 20 clients can connect to the AXIS Q7404/Q7401. If the number of connecting clients exceeds 20, a message stating you cannot connect to a camera will appear when you try to open an RM-64/25/9 video window.
- If the AXIS Q7404/Q7401 is not connected to a camera, or if the input signal is lost, such as an interruption of the camera connection, [NO VIDEO] will appear on the screen of RM-64/25/9.
- Video size and video quality cannot be set with RM-64/25/9. Available video sizes are 160 x 120, 320 x 240, and 640 x 480.
- If [Aspect ratio correction] is not selected in the AXIS Q7404/Q7401's [Image] tab of the [Video Stream Settings], the displayed video will be slightly compressed horizontally. We recommend that you select [Aspect ratio correction].
- Reboot the AXIS Q7404/Q7401 if you use it to change settings.

Functional Limitations

The following limitations apply to the AXIS Q7404/Q7401 when using RM-64/25/9.

Recording Schedule and Recording Mode Settings

- Only continuous recording can be used.
- The following functions are disabled in the [Edit Schedule Item] dialog box.
  - [Record audio if available]
  - [Advanced]
  - [Use the recording-mode stream]

Frame Rate

- The AXIS Q7404/Q7401 frame rate setting has no effect on the recording frame rate or live frame rate settings of RM-64/25/9. Set the frame rate with RM-64/25/9. Only integer values for the frame rate are available in this case (minimum 1 fps).
- When four cameras are connected, you may not be able to record or play back video at the maximum frame rate (30 fps).

Auto Adjust Frame Rate Function

Regardless of the RM-64/25/9's setting in [Auto adjust frame rate under heavy load] in [Viewer Settings], the Auto adjust frame rate function is always not available.

Video Format

Only JPEG is available for recording or live view.

Camera Limitations

- Even if a camera has pan/tilt/zoom functions, they cannot be operated via the RM-64/25/9 control panel if the camera is connected to an AXIS Q7404/Q7401.
- The control panel's [Presets] is disabled.

Audio

- Audio input/output is not supported.
- Even if you select the AXIS Q7404/Q7401's video window, the audio panel will be disabled.

Text Overlay Settings

The AXIS Q7404/Q7401 text overlay settings (date, time, text, video in video display) cannot be set with RM-64/25/9. In addition, the text overlay settings time display and RM-64/25/9's time display are not synchronized.

Sensor Input Terminal

The input terminals for the AXIS Q7404/Q7401 cannot be used.

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